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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. X, No. 1.   Washington, D. C.   January 4, 1926.

THE DENVER MEETING ON COSTS

By Joseph C. Kircher, Washington

The Denver meeting brought out a good deal of discussion on activity costs and considerable testimony that the cost figures are being used quite extensively in the field. In fact there was a good deal of reason to believe that the Forester's injunction "to live with our cost figures" is bearing fruit. There were many opinions, of course, as to the accuracy and usefulness of the cost figures but out of all that was said, the meeting agreed among other things that:

"The setting up of standards as indicators of the degree of perfection that is desired in the performance of specific jobs is a first essential in the control of costs. That sets up what it is that we want to accomplish. Relative efficiency of different men and of different units of organization and varying influences of other kinds, such as topography and climate, volume of business, etc., which make full utilization of time more difficult in some situations than it is in others, will always make it impossible to determine proper costs by standards alone.

Present cost figures serve as indices of matters for study in bringing about a proper and balanced financial control. The factors mentioned in the paragraph above must be taken into consideration in each individual case of proposed adjustment of allotment.

The criterion of proper costs is whether or not adequate returns in the way of public benefits are received for the money expended.

Your committee is of the opinion, basing judgment on the discussion of this subject, that more attention should be given to the study and application of cost figures, administrative audits, time analyses, etc.

It is recommended that the unit cost figures be put on a cumulative basis as soon as opportunity affords. This will by balancing fluctuating costs for different years furnish a better basis for both comparative and proper cost purposes."

It must be recognized that accuracy of figures is the first requisite and that without this the field will not have confidence in the figures. If it is also recognized that the charge of rangers' time forms the basis of most of the figures the importance of correctly charging time becomes immediately apparent.

There are indications that more accuracy in charges is being obtained. For instance, Unclassified was reduced from $135,532 in 1922 to $78,295 in 1924, a reduction of 42 per cent in spite of an increase in expenditure on the Forests of 35 per cent. During the same period total indirect Forest cost has increased only 8.4 per cent. Supervision on the Forests has gone up considerably (nearly 10 per cent) but most of the other items of Forest overhead have gone down. This leads one to believe that costs are being more closely charged to productive activities as well as that there is more progressive travel.

The figures should not fool us though. A very large part of the increased expenditures on the Forests are for roads and trails, many of which require little or none of the rangers' time and overhead ought not to be largely increased because of them. Direct expenditures on all improvements (including minor roads and trails) have increased from $2,164,317 to $4,175,308 in the past two years,- an increase of over $2,000,000, while direct expenditures on all other activities have increased only $611,570. Almost the entire increase in improvement expenditures is due to increased road and trail appropriations. As a consequence, although Forest overhead and indirect have increased about $16,000, the percentage has been reduced from 26.8% to 19.5%. Even this is high, especially when one considers that a million dollars District office charge is thrown on top of it. We must find a way to reduce it. The most promising way seems to me to be through better training, better progressive travel, improved methods of handling work and short cuts.

There is need, therefore, as seen by the Denver meeting to secure as accurate figures as possible, to keep the present system without too much change, to issue cumulative cost figures, and to find better uses for the figures as administrative helps.

With these conclusions the Washington office is in full accord and such action as can be taken here to make the cost figures more useful is to be vigorously followed up. But in putting the figures on a better basis the cooperation and help of the field is necessary. Since the conference, the 1925 figures have been issued and their close study and use as administrative tools is suggested.

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IN THE SERVICE OF MAN

By T. H. Ainsworth,
(late B. C. Forest Service)

The tree is a friendly thing the world over; shading the travel weary at the oasis of the desert; sheltering with canopy and fuel the people of the subarctic. In all the heraldry of the ages no figure could better illustrate or adorn the motto: "I SERVE !"

Indissolubly linked with the progress of mankind, from the floating log that suggested the first means of marine travel to our early ancestors, it has sailed unknown seas in the form of galley or galleon and pointed the path of the turbined leviathans of our own day.

Felled and fashioned by the hands of men, it became music's earliest medium rising from the crude instruments that swayed the barbarous to the peerless product of Stradivari of Cremona.

Prostituted by other hands it became the Cross of Calvary; the rack of the Inquisition; the blackened snags to mark where once the forest grew!

In man's scheme of defense or destruction it supplied the club, the stake of the bear pit; the crossbow; the stock of the Lewis gun.

Aiding the ingenuity of man, it gave a working practicability to steam engine, telegraph, telephone, and aeroplane, in the form of tie, pole, and strut.

While the desert wastes flaunted man's intrepidness the wilderness of trees invited conquest. It made the homes of those who pushed the frontier ever westward; encompassed their remains when the task passed into other hands, and, in the form of rough-hewn slabs it marked the parting of the ways.

Only within the walls of an old-world cathedral can there be found that atmosphere of sanctuary which pervades the forest. Theme of painter and poet alike, the feathery poplars of Lombardy and the gnarled oaks of England have proven an inspiration in the furtherance of art. It adds beauty to any landscape no less than it enriches life in a hundred other ways.

Pounded and mauled, it yields the pages upon which are written the unravelled hieroglyphics of rock and papyrus; the smiles and tears of fiction; grim histories of a war-torn world, and the records of our scientific achievements; while it clothes us with a silk that rivals the cargoes from old Cathay.

But whether the viewpoint be utilitarian or aesthetic, words cannot express a greater truth than this: If we destroy the forest we break a great law of the Creator, and in so doing label ourselves as retrogrades. That element of speed, unknown to our fathers - the passion to save time in all that we do, is sadly inconsistent with our carelessness which yearly results in the burning of centuries of patient growth.

It is often said that Canada is standing on the threshold of her nationhood. How interwoven are Canada's forests with her industrial destiny! Every tree carelessly burned might some day have been used for lumber to build a home; furnished props for the mines, or crates for our marketable products.

Every forest fire is the funeral pyre of future possibilities.

Forest fire prevention is a duty worthy of every Canadian, newcomer or native son. Every word spoken in the cause; every act rendered, increases our status as citizens. For the protection of life and property and preservation of scenic beauty; for the manifold needs of today and posterity, let all Canada ring with the slogan:

PREVENT FOREST FIRES. IT PAYS! !

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WE WIN

By Fred Morrell, D-1

On November 27 a judgment of $534.52 sought by the United States Government from the Anaconda Copper Mining Company for fire-fighting costs on a forest on Petty Creek, 30 miles west of Missoula, in April and May, 1924, was granted the plaintiff by the jury after the case had been tried before Federal Judge Bourquin. The occasion was a matter of some rejoicing in the Forest Service camp. The A. C. M. Company set fire to their slashings at the bottom of their slope and let it run up over their own land toward the Forest. The Ranger was unable to persuade the company's woods superintendent to put men on to watch the fire and trench it, if necessary, in order that it might not get on National Forest land. Finally when the fire was within a thousand feet or so of the boundary, the Ranger put a crew on and controlled it. It did not reach the National Forest and therefore did not damage Government property. The company refused to pay the bill for fire fighting on the grounds that the fire was being watched and that men were available in the company's camp who could have been put on the fire to control it, if necessary, before it reached the Forest boundary. When it got as close as it did, however, the Ranger felt that should the wind stiffen up, it would be carried over on to the Forest before it could be controlled.

There were, as I see it, two important principles involved in the suit. The first was: What care can operators be required to take in burning slash under the State law? Our contention was that to set fire to slashings at the bottom of a slope and allow it to run over the area without guarding it and taking precaution to prevent its spreading outside of the company's land, constitutes negligence. The second principle was: How far is the Forest Service privileged to go on private land in order to stop a fire that has not yet reached the National Forest? It was, of course, necessary to convince the jury that the fire constituted a real hazard to Government property at the time it was controlled.

This is the first fire trespass case that has gone to suit with a large concern for a number of years, and I think it will go quite a long ways in establishing the authority of the Government along lines of fire control.

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WASHINGTON NOTES

Appropriations Committee Hears Forester: Colonel Greeley went before the Appropriations Committee of the House December 18 and 19 to explain the 1927 estimates, as submitted through and approved by the Bureau of the Budget. The estimates approved by the Bureau of the Budget made changes from the appropriations for 1926 as follows:

	Decreases	Increases
Salaries	$ 8,623	
General Expense, Districts		$30,000
" " Lands	17,000	
" " Forest Products.	15,000	
" " Silvical Investigation		22,980
" " Reconnaissance..	11,550	
" " Improvement	25,000	

The Forest Road and Trail item has been placed at $5,000,000 for 1927 as compared with $4,000,000 appropriated in 1926.

What Congress will do on these items is, of course, unpredictable, but the Forester brought back from the hearings the impression of a committee in general sympathetic with the work of the Service and well pleased with its personnel and the way its work is done.

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Getting Into the Movies: Mr. Cohen, Editor of the PATHE REVIEW, sends us the following:

"Please be advised that we have released the subject "THE TIMBER FARMERS," made at Pike National Forest by our Mr. P. V. Hurd, in Pathe Review No. 49, out December 6, 1925.

"Under separate cover we are forwarding to you a print of this subject exactly as released.

"Mr. Hurd advises us that he was able to make the story through the kind cooperation of your representatives at Pike National Forest. Permit us to thank you for this courtesy.

"With all best wishes to you - "

The PATHE REVIEW reaches millions of people each week.

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FOREST PRODUCTS LABORATORY

Loblolly and Shortleaf Cones Open in Kiln in Eight Hours: A very interesting series of five kiln experiments upon the drying of southern pine cones was conducted in October for the Southern Forest Experiment Station. The purpose of the experiments was to determine just what conditions of temperature, humidity, and circulation would produce the most satisfactory opening of the cones within a reasonable time. It was decided to keep the duration of the drying period within eight hours and not to exceed a temperature of 140° F., temperatures ranging from 120° to 140° F. were used, with relative humidities from 10 per cent to 30 per cent. It appears now that a temperature of 140° and a relative humidity of 10 per cent with an air circulation of 100 feet per minute will open shortleaf and loblolly pine cones satisfactorily in eight hours. The tests did not include longleaf pine because the shipment of the longleaf cones did not arrive in time. Several special runs will be made as soon as the cones are received. The internal fan kiln was used for the experiments, the air distributing system being modified in such a way that the entering air was distributed with reasonable uniformity over the bottoms of four 5' x 6' trays. Each of these trays was a double decked affair made especially for the experiments. The cones were placed in the upper deck, and the seeds accumulated on the lower deck. After the drying was completed, the cones were tumbled in an especially designed tumbling drum to shake out the seeds which did not fall out during the drying. The kiln functioned satisfactorily throughout the five runs.

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FOREST EXPERIMENT STATIONS

Spruce and Fir Thrive on Exposed Plots: Observers who have wondered at the manner in which cut-over spruce stands in the Northeast are replaced by a much larger proportion of fir in the new growth, and who have at the same time remarked upon the fondness our red squirrels show for spruce seed, are urged to put two and two together, or otherwise to account for the following figures obtained from tallies taken this year on our permanent methods of cutting plots in the White Mountain spruce region. A number of small reproduction plots were established on the permanent plots, half of them being cleared of all litter and plant growth and exposing thoroughly the mineral soil, and half being left undisturbed. Thereupon the autumn of 1924 contributed to the experiment equally heavy crops of fir and spruce seed.

Tally sheets, carrying June and October jottings, show the following:

Spruce and fir seedlings on exposed plots, per acre	27,250
Same on undisturbed plots	6,500
Ratio all seedlings, exposed plots to undisturbed	4 to 1
" of spruce on exposed plots to spruce on undisturbed ..	3 to 1
Same ratio for fir	5 to 1
On exposed plots, ratio of fir to spruce seedlings	4 to 1
Same ratio on undisturbed plots	3 to 1

Germination of both species began earlier and mortality was greater on the exposed plots than on the undisturbed.

Fir apparently takes greater advantage of cleared or partially cleared ground, as in skid trails, sled roads, and log landings, and also comes in more heavily where advantages are even. If we can't blame this on Mr. Burgess's bedtime-story hero, on whom shall we blame it?--M.W., N.E.Exp.Sta.

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DISTRICT 1 - NORTHERN DISTRICT

Conference to Combat White Pine Blister Rust: The trustees of the White Pine Blister Rust Conference recently met in Portland This conference is an association of private owners, State and Federal bureaus organized to combat the white pine blister rust menace.

Blister rust has been found in Oregon during the last year and has made some advance in British Columbia toward the white pine stands in North Idaho. While no blister rust has a yet been found within the District, it is considered quite certain that it will reach the white pine stands of this section within a few years, and all practicable preparations are being made to control it when it arrives.

The work is being done under the direction of the Office of Blister Rust Control and consists of experimental ribes eradication methods, reconnaissance, and studies of the factors which influence the growth of ribes plants.

The conference is working on a 10-year plan, which calls for an appropriation of $175,000 of Federal funds during the fiscal year 1927. The States and private owners are furnishing substantial cooperation in the way of money and cooperative effort.

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Clarke-McNary Cooperation: The Secretary of Agriculture has recently approved an agreement with the State Forester of North Dakota covering the production of forest-tree seeds and plants and the establishment of windbreaks and farm woodlots in that State, under the terms of Section 4 of the Clarke-McNary forestry law. The State Forester, Mr. F. E. Cobb, Bottineau, N. Dak., is also president of the forest school at that place. His plans for the coming year include the establishment of a nursery with a trained forester in charge and the preparation of planting sites at various places throughout the State. Later, tree seeds and seedlings will be distributed at cost. The approved budget for the present fiscal year ending June 30, 1925, contemplates the expenditure of $5,100 for this work, of which 39.3 per cent will be paid by the Federal Government.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Ranger Examination in Michigan: Thirty-one applicants took the examination, among whom were two negroes and one cowboy. The cowboy was dressed in the picturesque costume of the western plains, and it was later learned that he lived in Detroit and wore the riding boots, checked shirt, and sombrero for the purpose of impressing the examiner with his importance as an outdoor man. Among the thirty-one men taking the examination there appeared to be some very good material. On the other hand, there were a number of men trying for the examination that did not have the qualifications to warrant them even making the smallest attempt at filling the job as a Forest Ranger. Their educational qualifications were so deficient that it seems something should be done by the Civil Service Commission to inform applicants as to the amount of education required in order to take the ranger examination. This would be only fair to the men desiring to take the examination and would cause less confusion and cut down expense in the Civil Service offices. Many of these men traveled great distances, some from Indiana, Illinois, Missouri and all parts of Michigan.

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Large Enrollment in Training Courses: There have been 278 applications for study courses received from the field members of this District. On five Forests 100 per cent of the personnel has submitted applications. This is a larger number of applications than last year. Another interesting thing is the heavy running of our grazing courses, about four times as many applying this year as last.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

How the Erosion in La Luz Canyon Began: About 35 or 40 years ago, according to information secured by local Forest officers of the Lincoln National Forest, there was a water power, saw and grist mill at the Springer place, now owned or controlled by the Thomas Grain Company. There was a ditch directing all the water in La Luz Canyon to this mill. There was no other ditch or arroyo in the canyon, the entire canyon being a cienega. Some washing began from the cutting done by this mill. About this time large cow outfits and more erosion began to show up, then, between 25 and 30 years ago, the Alamogordo Lumber Company logged the entire head of La Luz Canyon watershed consisting of La Luz and Devils Canyons. This excessive erosion in the canyon is the result of these three factors, but until the head of the canyons was cut and burned over the erosion, though started, was negligible.

This information was obtained principally from such "Old-Timers" as Messrs. Eli Moser and P. M. Nelson. Another old-timer stated that when the Mescalero Indians made their last stand against the soldiers that they fired the whole west slope of the Sacramento Mountains behind them. This probably had some effect on the eroded conditions of this area, but very little is known as to the amount that could be charged to this.

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Radio Has Official Uses: A Tusayan Ranger is having a hard time figuring out how much time he can give to a study course. The reason: He has a radio. In this connection we might mention that he uses the flagpole for the aerial. In other words, when he takes the flag down, he pulls the aerial up. He claims this is a sure way for complying with the practice of taking the flag down at night and should be the standard requirement at all stations where there is a radio outfit. If the radio doesn't work he knows he forgot to take the flag down.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Grazing Management Plan Conference: The range management conference, with representatives from all Districts, including the Assistant District Foresters in charge of Grazing in four Districts, which was recently held in Ogden, will doubtless go down in history as marking a distinctive milestone in progress in range management. For the first time since the inception of the range management idea in the Service, over fifteen years ago, a meeting has been held for the sole purpose of dealing with the handling of the range resources on the ground. That the meeting was tremendously well worth while was the general feeling among all who attended.

Although the primary purpose of the meeting was the working out of more unified and progressive methods in the preparation and application of range management plans, practically every feature of getting better range management applied on the ground was covered. As the result range management, including grazing reconnaissance and other phases, has been brought down out of any haze or mystery that may have surrounded it to a concrete thing on the ground, and there, of course, is where it belongs. The attitude of the meeting from the first to the last day was to critically examine each and every phase of the subject and put it through the acid test of what was its value in actual application to meet the needs of forest administration. In other words, the attitude, whether with respect to management plans, reconnaissance, technical training or grazing research, was that we want them to thrive and prosper as a useful tool and not as something which is possibly worth while in the abstract or in theory only.

The solid week of discussion and exchange of ideas brought out that there was not wide difference of opinion as to the principles involved and their value among individuals or between groups of men represented. That a gap between grazing administration and grazing studies does not exist is evident from the fact that the resolutions presented by the various committees all passed with some minor amendments without a dissenting vote, but yet there were few, if any, present who would have hesitated to express themselves the other way if not in accordance with their ideas.

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DISTRICT 5 - CALIFORNIA DISTRICT

Outside Exhausts: Medium sized timber, average maximum yarding distances of 800 feet, no spark arresters, no blowers, standard sized boilers, split Douglas fir wood - these are the conditions under which outside exhausting wood burning donkeys are being used successfully in the Olympic

Peninsula region of Washington. There is some variation in practice. For example, one logger uses a screen over the stack during the fire season and resorts to the blower occasionally. The better method appears to be to leave off both the screen and blower.

How does this check up with the tests made this past season in California? In general, the results of the California tests indicated a maximum yarding distance, without undue loss of efficiency, of 500 to 600 feet. There are reasons for the difference. In the first place our fuel is of generally poorer quality. Much of our timber is heavier. Our machines are, on the average, of smaller size and power. Our operators have had little experience in firing outside exhausting donkeys, and there are tricks to all trades. It seems to me that the California showing can be reconciled easily with what we have learned of the Douglas fir operations.

What are we going to do about it? I subscribe to Black's and Berry's idea of the three-way exhaust for the equipment already in use. Turn the exhaust outside when moving overland, when yarding short distances and occasionally when yarding long distances during period of exceptional fire danger. It is too valuable a fire preventive measure to discard as impracticable because it does not work well under all conditions. Continued usewill show ways to eliminate some of the drawbacks and should gradually extend its range. The spark arrester design is part of the problem. It must permit free draft when the exhaust is outside. As for new equipment, why not use gas tractors - powerful, mobile and relatively safe? If a woodburning donkey is absolutely necessary, specify oversized fire box and boiler and thereby greatly extend its yarding range with outside exhausts.--J.H.P.

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Yes, Snakes Climb! During one of my field trips into the New River country, while passing by a large live-oak tree, I heard a rattle. I got my horse by and went back to locate the snake. I looked for several minutes and could see no snake, and was about to decide that there was none when I saw a snake's head protruding out of a hole in the tree about three feet from the ground. I killed the snake and found that there was a pocket in the tree that he could coil in, but he had to climb the tree to get into it. The tree was about 20 inches in diameter.--F.A.G., Trinity.

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Are You Caught in the Fence? It always amuses us greatly when our friends and enemies howl long and loud over our boosting of the glories of California. We still remember from our early farm experience that it was the pig caught in the fence that did the squealing and not the one with his nose in the trough. The pride of Californians in their State is easily explained, and we don't mind letting you in on the secret - the same being that there are more contented people in California, in proportion to the population, than in any other State in the Union. That's why we're boosters.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Proud: The Malheur force is proud of its 1925 fire record. Total fires, 114, and total acreage burned 165. Of our two Class-C fires, one was preseason and the other occurred when the Forest was obscured by drifted smoke. These two burned over a total of 97.4 acres, leaving only 68 acres for the other 112 fires. We had no overnight fires, and have exceeded the D-6 objective of less than 10 per cent man-caused fires. With full recognition for the part played by Mother Nature in this performance, we still believe that at least half the credit goes to the Guards' Training School held at Bear Valley in June.

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Xmas Trees: In order to impress on the younger generation how to select a Christmas tree properly, Ranger Wiesendanger made a small model forest, using about 100 3-year-old Douglas fir trees and gave a demonstration on December 11 before 575 children of the Holladay School of Portland and told them that trees should be cut from a thicket, leaving others not less than 6-8 feet apart. Trees should be inspected before they are cut so that they will not be discarded. An imperfect tree can be used to good advantage in a corner of a room. The demonstration was made outside of the school building and a picture was made of it by the Pathe people to broadcast over their regular circuit. It was also featured and illustrated on the front page of the Portland Telegram.

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The Cougar - She Screams: One day last summer the Deadman Creek road crew on the Colville Forest were peacefully sleeping when suddenly part of them were awakened by a terrible scream a short distance away.

Curley Graves landed out of his bunk in one jump calling for assistance to help rescue the woman he heard calling in distress. Jim Powers also "heerd" her but "lowed" she was a man. Some of the crew, however, knew the scream to be that of a cougar so that no search was made for the woman in distress. The next morning cougar tracks were found in the road not far from camp.

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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. X, No. 2. Washington, D. C. January 11, 1926.

Dear Colonel Greeley:

There is nothing which has given me greater satisfaction during the past year than the efficiency and spirit with which the members of the Department of Agriculture have carried forward the work of serving the farming interests of the nation. I want you and the members of your office to know that I thoroughly appreciate what has been accomplished and that you have my best wishes for a New Year full of prosperity, satisfaction, and pride in the competence and usefulness of your work.

Sincerely yours,

(Signed) W. M. JARDINE.

THE GRAZING END OF THE DENVER CONFERENCE

By Will C. Barnes, Washington

Looking back over the rather strenuous two weeks at Denver I find myself impressed with the genuine democracy of the meeting. It was a give and take affair every day. Nobody's pet ideas or plans were spared. If there was any dissent from some one's statements nobody was at all backward in getting into action and saying so in plain language.

Grazing seemed to be the "houn' dawg" of the meeting and was kicked around pretty promiscuously. Everybody seemed to be fairly bursting with knowledge as to how livestock on the National Forests should be managed and took cracks at us and our methods with sincere delight. Mostly we who stood for Grazing made it our business to come back at them when we got the chance.

Grazing studies, range appraisal matters and the need of some definite grazing legislation were given a large part in the discussions. The majority of the men present felt that the range appraisal figures should be backed by the Service but that the fees thus established should not be put into effect until the livestock industry, especially the cattle end of it, was on a much firmer basis than at present.

At first most of the men were averse to taking chances on new legislation, feeling it might take from the Secretary of Agriculture some of the powers he already has through the original laws establishing the National Forests, but Col. Greeley won them over to his idea of drawing up a tentative bill which he could present to any interested member of Congress as representing the views and needs of the Service along legislative lines.

The main points covered were (a) setting aside ten per cent of the fees to be used for range improvements; (b) creating a board of appeals for each Forest or group of Forests, to be under the jurisdiction of the Secretary of Agriculture, their findings subject to review by him if he deemed such action necessary; (c) authorizing the impounding and sale of livestock found in trespass on Forest ranges; and (d) establishing such reasonable fees for the value of the forage as may be determined by the Secretary of Agriculture. The enactment into law of any or all of these four points would put us in a very satisfactory position.

The Grazing men were well satisfied with the results of the discussions and decisions because out of it all came from everybody present a full, clear recognition of grazing as a thoroughly well established factor in forest management, as far as concerns the National Forests.

The general round table discussions allowed plenty of latitude to each person. Fortunately for the peace and happiness of all concerned there were no long distance speakers, and time was seldom called by the chairman. It was a "get together" meeting in every sense of the word and no end of matters were ironed out between Districts and the Washington office which never could have been settled by correspondence or local discussion.

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RANGERS ONLY

By E. L. Perry, Santa Fe

I estimate that if all the material that has been written about work plans, notebook schemes, and systems of work for Rangers was assembled in one place, there would be sufficient mimeographed sheets to completely paper a house built of the lumber contained in the General Sherman tree, with enough left over to kindle the fires in the aforesaid house each day for the first three years of its occupancy.

But harking back over this vast family of brain children, I am struck by a curious fact: Some ninety nine and a fraction per cent of the panaceas designed to remedy the plan-less, notebook-less, system-less condition that is popularly supposed to exist out in the sticks have emanated from the lofty domes of the riders of the swivel chairs. Seldom has the doughty Bill broken forth in type to tell a cock-eyed world what, in his opinion, is what, in the matter of systematizing the Ranger's job.

Why? Is it because Bill is bull-headedly and idiotically opposed to the idea of system in his work? Not by any means. As a matter of fact, the first thing that every Ranger does - with the occasional exception that proves the rule - is to grope around for some system that will fit his particular problem, his personal idiosyncracies, and his inherent limitations. No hand-me-down, all-things-to-all-men scheme will do it. Each man, if he is worth his salt, must build his own, and it goes without saying that he will not make a perfect job of it, even for himself. But on the other hand, he is sure to stumble upon some perfect gem of an idea in working out his own salvation; some idea that some other Ranger would give his eye-teeth to know about. Given enough of these brilliant conceptions, any man might scratch through the pile and emerge with a system that would fit him like a drink of water.

What we need is a little interchange of ideas among Rangers upon this Ranger efficiency business. And to that end I am willing to expose my lack of ingenuity first, but only upon condition that Ranger Hank of Elsewhere-In-The-Woods will crack right down and show me how he does it better. If anybody can tip me off to some scheme for saving an hour, which I can then devote to tinkering my home-brewed radio, his name shall be called blessed forever. I suspect that the authors of some of the double-barreled, three-ring circus, work plan schemes will wonder how in sin I manage to cling to the pay roll, but here goes:

MY ANNUAL WORK PLAN, PROGRAM, SCHEDULE, STATEMENT OF OBJECTIVES, or what you will

For convenience, let us suppose that I took over the District last January. At that time, then, I sat me down and made up a list of jobs that must be done, as far as my knowledge of conditions would permit.

No verbosity, no long-winded dissertations; just a plain list of jobs, briefly stated, numbered, arranged as to activities, and marked for priority. I then punched the sheets so as to be bound in a cover, and after each activity I included 3 or 4 sheets of blank paper. Scarcely had I got the cover on than a new job popped up - a grazing job say. I opened the book to Grazing, and scribbled the new job under the last typewritten one. Throughout the year new jobs constantly sprang up. If they had to be done during the current month I merely jotted them down on the monthly (notebook) job list; if not, they went into the annual plan.

Comes the new year, as the title writers say. I take the old plan, which now looks a good but like something the cats dragged in, and begin to cull out the jobs that have not been done and scratched off. Always there are some which have become obsolete because of changed conditions, or which were damfool ideas to begin with, and these I cheerfully abandon. The residue is next year's plan, except that I must skin through the Supervisor's Program and pick up whatever jobs he has listed for me in particular. These I mostly condemn - but include. So now my plan is all shipshape, and on the second day of January I will begin messing it up with additions, interlineations, notations, and what not.

Untidy? I admit it. Unorthodox? Quite. But I seem to get utterly bogged down in any system more intricate. And it seems to work - for me.

MY MONTHLY WORK PLAN et al.

This is also a simple list of jobs, written on the 4 x 7 notebook sheets. On the first of the month, I take last month's plan and pick out any jobs that have not been done. Then I go through the annual plan and select sufficient jobs, in the order of their priority, to fill up the month, or thereabout. I arrange this list as to trips or localities, and sometimes write up a continuity for the trip if it seems necessary. As the month progresses, and new jobs arise, I jot them down on the list if they are field jobs and to be done at once. If they are office jobs, I scribble them down in a shirt-pocket notebook, if in the field, and on a little scratch pad if at home. Which latter memoranda I then do nothing more complicated with than to chuck into the retention basket.

MY OFFICE SYSTEM

Once upon a time I installed in my office a system that could theoretically do everything but sit up and say uh-huh. In my mind's eye I could see correspondence and reports flowing smoothly out of the office, punctual to the minute, and with slight assistance from me. In two months' time it had me at dagger's points with the Super's office, and afraid to venture out among the District population.

My present system consists solely of an attention basket and a report calendar, arranged with one month to the sheet, and tacked up on the wall. Into the basket goes letters to be answered, memoranda, data for reports, and anything else that requires action. When the spirit moves me to do office work, I glance at the calendar to see what reports are coming due, if any, then churn up the contents of the basket and fly to it. My ambition is to some day see the bottom of that basket.

This will probably give the system sharks the delirium tremens, but to date I have not been drawn and quartered for delinquency. However, I realize that it could be much improved upon had I but the ingenuity.

MY NOTEBOOK SYSTEM

No false modesty shall restrain me from confessing a sort of sinful pride in my notebook scheme. It was born of a memory that is not only faulty but practically non-existent, and a stubborn distaste for touring around all cluttered up with a cantina full of books, maps, forms, etc., ad infinitum, if you get what I mean.

My equipment consists of but two pieces; a looseleaf memo. book of shirt pocket size for casual memoranda, and one of the 3-ring, side-opening notebooks which were formerly the prized and exclusive privilege of the haute monde of the Service. I was a long time perfecting the contents of this latter, but I believe it now contains all the information and data that any reasonable person will ever need in the field, and condensed to the nth power. Space does not permit a table of its contents, but it includes a multitude of check sheets and lists, forms, maps, and even a topographic map of the entire District on a 1" scale, bearing status, land corner data, and all culture. The book has not failed me in an emergency in a long time.

Thus are my sins and heresies laid bare, and I adjure ye to step up to the mourner's bench and do likewise. Maybe out of the grab bag of experiences we shall all come to be clothed in pure wool instead of mohair.

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YE EDITOR'S CORNER

Ranger Perry good-naturedly assaults the occupants of swivel chairs. (Will some one write and tell us something about them? Who they are? Where they sit, etc.?) He calls for ideas from his compadres and asserts that each Ranger must work out his own system. We have a thousand Rangers. Does that mean a thousand systems? What say you, brothers of the diamond hitch and tin lizzie?

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"We don't know," (admits our Chief of Operation) the reason for the slump in forest fires in 1925. Can't some of our readers tell him why, and also how to keep them slumping? Why were they fewer on your Forest or District this year?

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WASHINGTON NOTES

Reduction of Man-Caused Fires on the National Forests: Number of man-caused fires for the years 1919 to 1925, inclusive, is as follows. The figures for 1925 are to October 1, only. The final figures for the year will be slightly greater:

1919	4,803
1920	2,996
1921	4,400
1922	4,052
1923	3,116
1924	4,826
1925	2,883
Average for the 7 years	3,839
Average for 6 years 1919 to 1924	3,999

The reduction for 1925 is striking, gratifying, and much more than was to be expected considering the season and past records on man-caused fires. Man-caused fires for 1925 are 25 per cent less than the average for 1919 to 1925, inclusive; 27 per cent less than the average for 1919 to 1924, inclusive, and 40 per cent less than the number for 1924.

While the 1925 season was easier than 1924 it was far from being an easy season. On a considerable number of Forests it was in fact a relatively "bad" season. It seems reasonable to ascribe the 1925 reduction of man-caused fires largely to human effort rather than to favorable weather.

What caused this unusual reduction? If we knew, we could direct future effort more intelligently. The answer is hidden away in the complex array of causes which determine the number of man-caused fires on the National Forests. One guess which stands analysis fairly well is that the closing of areas to use during 1924 is to be credited with a large share of the reduction for 1925. These closures seem to have produced an effect on the minds of Forest users which the usual educational effort has failed to secure.--R.H.

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Tom Gill Returns from Cuba: The genial Assistant Chief of Public Relations, Tom Gill, has returned after a two-months' trip in eastern Cuba, where he made a study of forest conditions in the Province of Oriente for the Tropical Plant Research Foundation. He says that four hundred years of exploitation has badly depleted the hardwood forests and unless corrective measures are taken within the near future the wood-consuming interests of Cuba will be forced to depend on imports for their supply. Studies made at this time indicate that valuable timber can be raised at from 2 to 2½ times as fast as in the United States.

Mr. Gill has now resigned from the Forest Service and began the New Year by shouldering the duties of Associate Editor of the American Forests and Forest Life Magazine and will be in charge of educational publicity for the American Forestry Association. We wish him many Happy and Successful New Years.

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DISTRICT 1 - NORTHERN DISTRICT

Big Timber Sale on Coeur d'Alene: Receipts amounting to $158,500.00 were received from the sale of 14,064 M feet of timber from an area of 640 acres on Uranus Creek, Coeur d'Alene National Forest. Ninety per cent of the cut was white pine, which sold for $12.40 per M stumpage. This was mature timber, age 140 to 160 years. The trees averaged 6 logs per tree, running 10½ logs per M.

This sale was made in an area of steep topography with sharp,narrow creek bottoms and high ridges. The slopes in the area were from 45 to 75 per cent. The timber was skidded with horses and trailed in hewed chutes with 5-ton tractors. The logs were then carried by railroad to the mill, a distance of 45 miles. The logging cost averaged $18 per M.

The brush was piled and burned by the Forest Service under cooperative agreement at a cost of $1.00 per M.

Ninety-three per cent of the white pine and all of the white fir over 12 inches was marked and cut. There was left on the area 1,500 M white pine and 6,000 M of mixed species. On an adjoining sale area there is 8,000 M of mixed species. This timber will be the basis of another sale in the near future.

On the area it is estimated there is 6,000 feet of bug-killed white pine timber, most of which died since 1913. Had this timber been protected, it would have added $75,000 to the receipts from this sale.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Winter Timber Survey Work is Well Under Way: On the Black Hills National Forest a ten-man party, consisting of Rangers from that Forest and those transferred from Forests in the western part of the District, is engaged in covering a portion of the Spearfish working circle in the northern part of the Forest in South Dakota and eastern Wyoming.

On the Harney Forest, two men from the western part of the District, with the help of local Forest officers, are to complete an intensive timber survey of that Forest, similar work having been carried on there during the past several years.

Four Rangers from the western part of the District are assisting in timber sale and timber survey work on the Minnesota Forest.

Six Rangers on the Superior Forest with one from the Michigan, in charge of the local forest examiner, and with the assistance of cook and packers, are doing timber survey work on the Superior Forest in Minnesota.

In addition, a number of Forests in the western portion of the District are planning to do timber survey work on a smaller scale, taking advantage of slack time and favorable weather conditions for preparing for timber sales and management plans.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

To Popularize the Powell: Dr. J. E. Broaddus of Salt Lake and Walter E. Hanks, at one time a Ranger on the Powell Forest, were recent visitors at the District office and discussed with a number of men the development of recreational attractions and roads in the northeastern part of the Powell Forest and the adjoining country.

Dr. Broaddus, the well-known outdoor enthusiast and expert photographer of Salt Lake, brought with him a sheaf of pictures which he took this fall in that part of the country, most of them among gorges and cliffs in the vicinity of the Fremont River. The scenery as shown by his pictures is indeed striking, and besides there are many interesting Indian remains to be found throughout the region, in many cases not far from present roads. Hieroglyphics, remains of Indians, grinding tools, bones, etc., were discovered in large numbers. There is a large quantity of petrified wood also, the best of it lying as sections of tree trunks, some of which were as much as four feet in diameter. This is on the very southern tip of the Fishlake Forest.

Mr. Hanks discussed the road which the people of Boulder - a small settlement on the Powell Forest - wish in order to facilitate communication with the outside world.

We surmise that Messrs. Broaddus and Hanks made a fatal misstep if they thought to get Charlie Evans interested in their proposition. They brought with them a magnificent specimen of petrified wood. Evans lifted it to see how much it weighed and kinked something in his back. He failed to show up the next morning, but now has appeared on deck, limping around cautiously. Says Littlefield, "These field men can't be too careful when they come back into the office."

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DISTRICT 5 - CALIFORNIA DISTRICT

Forest Management Conference: Discussion of all pertinent phases of forest management from the angles of research, silviculture, forest legislation, fire prevention and suppression, and related activities occupied the four-day annual conference last week in Victoria, B. C., of the Western Forestry and Conservation Association, comprised of private, government and State timber interests in California, Oregon, Washington, Idaho, Montana and British Columbia. More than 130 forestry experts in all branches of the work attended the meetings.

The first two days of the conference were given over to the educational publicity and forest protection committees, followed by two full days of papers and discussions on fire prevention, slash disposal, reforestation, research, insect control, forest diseases, taxation, spark arresters, etc.

California was represented at the conference by State Forester M. B. Pratt; S. R. Black, California Forest Protective Association; Swift Berry, Michigan-California Lumber Company; E. B. Birmingham, Fruit Growers Supply Company; Major E. H. Bowie, U. S. Weather Bureau; Forester Corbitt, Pacific Lumber Company; and Messrs. Deering, Kotok, Hutchinson, and Dr. Meincke from San Francisco.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Fire Equipment Again: During the summer of 1925, on a bad fire on the North Fork of the Skykomish River, we were using two gasoline pumps, one locomotive with pump and the gravity system. In using this gravity system, Mr. Treen, Assistant Supervisor, devised an intake, which makes the gravity system much more effective. This intake consisted of 30 feet of 30-inch wide canvass sewed together, making a reservoir about 9 inches in diameter. To this container, a section of 2-inch hose was attached and to the 2-inch hose, a one and one-half inch hose was attached. By using this wide reservoir at the stream, we were enabled to get a much larger quantity of water than we could get merely by having the ordinary hose as an intake. A No. 9 wire around the end of the reservoir at the intake serves to keep the end of the reservoir open. Fly screen is fitted over the end of this to prevent the entrance of leaves and other material. Without the use of this reservoir, it frequently happens that you have insufficient water to throw a stream any distance from the nozzle, but by having this reservoir, we find no difficulty in supplying water for one nozzle and in many places sufficient to supply two nozzles of smaller size.--W.C.W.

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A Heavy Bug Year: During 1924 there was probably more yellow pine killed by the western pine beetle in Oregon and Washington than in any one of the past ten or fifteen years. It is probable that the reduced vitality of the yellow pine brought on by the moisture deficiency of two or more growing seasons helped the beetles to get a strong foothold. The 1925 beetle situation looks a little better.

The general trend of beetle activity in the yellow pine of southern Oregon is indicated by the following summary. It covers a yellow pine stand of two and one-half million acres, estimated at eighteen billion board feet and located in Klamath and Lake counties outside of the boundaries of the present control project.

1921	40	million	board	feet
1922	41	"	"	"
1923	50	"	"	"
1924	80	"	"	"
1925	60	"	"	"

These annual losses are not heavy when distributed over the entire area, but 40 per cent of the loss is concentrated on less than five per cent of the area.--A.J.J.

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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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DISTRICT FORESTER REDINGTON TO JOIN WASHINGTON STAFF

By Colonel Greeley

District Forester Paul G. Redington has consented to abandon the everlasting sunshine of California for the uncertainties of cloud and light in Washington. March 1 will probably see him enrolled in the staff of Assistant Foresters.

This assignment represents in part a realignment of Forest Service work which gives promise of better results from the standpoint of organization, and in part further emphasis and man power behind the outward spread of forestry.

The Forest Service has developed three main jobs: the administration of the National Forests, research in forestry and forest utilization, and the extension of forestry to the four-fifths of our timber-growing land outside of Federal ownership. The extension of forestry has been carried on hitherto through cooperative work with the States under the Weeks act and the Clarke-McNary act, through our cooperative work with landowners, and through the educational and publicity work of the Service under Public Relations. The opportunity for effective extension work in all of these fields is well-nigh unlimited. The constantly wider application of forestry in one form and another and through one channel and another is the outstanding development of recent years and will continue to offer a very great, if not the greatest, opportunity to the Service for many years to come.

It seems probable that this opportunity will be utilized most effectively if all of the interests and activities of the Forest Service in this field are combined under one executive direction. Hence it is planned to bring together in one Branch the cooperative work with the States and private landowners hitherto conducted by Forest Management, the cooperative work bearing upon forestry extension which we have carried on, in one way and another, with a wide range of organizations and interests, and all of the activities of the present Branch of Public Relations. The change will give greater recognition to our State and private cooperative work. The term "Public Relations" so effectively covers the field of the new Branch and has acquired such a fine standing in our conception of fruitful lines of Service endeavor that it will be retained as the designation of the new unit.

A change of this nature was first suggested by Herbert Smith a year or more ago; and is in line with a plan advocated by Girvin Peters, Carter, and others for bringing all extension activities together and making them one of the main divisions of Service work. It has become possible because of the admirable spirit of cooperation and loyalty to the Service on the part of Girvin Peters, Carter, and their associates in our activities under the Clarke-McNary act and on the part of Herbert Smith in regard to the duties of Public Relations which will be merged into the new Branch. In announcing this development, I want to express particularly my appreciation of the attitude of these men. Peters has been identified with our cooperative work with the States ever since he entered the Forest Service in 1902. He has carried it with exceptional ability and insight through the successive stages of the early joint studies of State forest conditions, the cooperation in forest protection initiated by section 2 of the Weeks act, and the broadening phases of State cooperation provided by the Clarke-McNary act. Peters' work in these fields represents an enormous contribution to the progress of American forestry; and he will continue under the new Branch in active charge of State cooperation.

I do not need to tell Forest Service men the place that Herbert Smith has established in our organization and in the annals of forestry during his 25 years of service. In guiding the counsels and progress of the Forest Service from year to year and in the leadership of its educational and publicity activities from the start, Mr. Smith has identified himself with our progress and public influence in a measure beyond that of any other present member of the organization. He created the Branch of Public Relations and during the past five years has made it an extremely effective and stimulating agency in reaching and guiding public opinion. Herbert will continue in the educational and informational work which he has so admirably developed, with an opportunity to devote more time to special projects.

I believe everyone in the Service will agree that we have selected the right man in Paul Redington to head up the union of these two long-established lines of Forest Service work and to develop the opportunities for expanding them. He has the background of Service-wide experience, the capacity to make and hold public contacts, and the vision of forestry as an onward sweep of national proportions that insure success in his new assignment. Of course he is going to need the help of all of us and I know that help will not be lacking.

The next District Forester for California has not yet been selected, but this will be done within the next few weeks.

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"OUR DISTRICT"

By F. C. W. Pooler, D-3

We have all seen fine machines with complex parts highly coordinated and operating with clockwork precision. Organizations are like machines in a way but with this essential difference - that each part being an individual can operate fast or slow, accurately and carefully or otherwise, as the individual wills. Coordination, so essential and yet so simple a matter in mechanics, is equally essential but infinitely more difficult of attainment in organizations; and the farther flung that organization, the more isolated the individual parts, the more difficult is coordination and real teamwork.

That is why in D-3 we have been trying so hard to get a common conception of what is good practice and what is poor practice, what are the more important things to do and what are the less important, and above all, a common conception of what the job of the District really is. Mechanically perfect machines are interesting in themselves but their usefulness is gauged by their product. Organizations like the Forest Service, though tremendously interesting and effectively working bodies of men and women, are useful only as they turn out worth while product. It is not enough for an organization to be self-perpetuating in the pink of condition -- it must render valuable service or die, and in the last analysis the value of the Forest Service as an organization in the Southwest is going to be judged by the condition of the forest properties entrusted to its care. If, after years of administration, those properties are not infinitely better off as forest-producing areas and as watersheds;if, subject to the needs of forest and watershed protection, the ranges as such are not improved by virtue of forest administration; if the forests are not made to render larger public service by improvement and development - then our administration will be considered a failure.

The past year has been a record breaker in many ways in D-3, notably in the direction of detailed plans for needed grazing adjustments which 1926 should see put into reasonably full effect. Another notable accomplishment was the ranger training camp which, as the years go by, is going to be a very important correlating agency and builder of esprit de corps. Another bad fire season was met in distinctly creditable style, timber sale administration on the large sales reached new levels of satisfactoriness, and 1926 should see a similar spurt as to small sale operations which are still substandard. Better inspection, closer supervision, more intelligent and wiser planning, and better teamwork and finer organization spirit were all in evidence in 1925, and the Service and District is meeting its critics, constructive and otherwise, in thoroughly creditable fashion, taking advantage of the criticisms that are basically sound and ignoring or answering unfair criticisms, but meeting all in the broad, fairminded way that public service organizations should display when under public fire.

Nineteen Hundred and Twenty-Five with its accomplishments and plans is a good foundation for 1926 and its problems. The work ahead is not along new lines. Our 1926 job consists purely of better work along old lines; fewer breaks on fires; a closer knit and better trained fire and regular organization; better range management and range management plans; improved timber sale practice, particularly on small sales; better use of time and money. All these are easily within our grasp and will make 1926 break all previous annual records. District 3 organization spirit and teamwork are carrying us along to increasingly effective work in our task of improving the condition of the forest properties. Let us never forget that this, after all, is our task. All else is ways and means. The man on the ground is the one on whom dependence must be had for the improved conditions we are seeking - his is the real post of honor. It is the job of the rest of us to supply him and equip him for rendering the best service and to help him meet his forest problems effectively and promptly as they arise. If we keep these things in mind, it will be easier than otherwise to make 1926 our banner year.

Here's hoping and trusting that the coming year will be a happy, prosperous, and profitable one in every sense for each and every individual in the organization and for the Southwestern Forests the best ever.

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WHO PAYS THE BILL FOR ROAD WORK?

By T. W. Norcross, Washington

According to statistics prepared by the Bureau of Public Roads, the total highway bill of the Nation for 1924 was about $1,180,000,000. Of this, other agencies estimate that some $629,000,000 came from the following sources:

(1) Bonds
    (a) To be paid from general funds.
    (b) To be paid by motor vehicle fees.
(2) Federal Aid.
(3) Property taxes.
(4) General taxes on all business.

The balance of about $551,000,000 was derived from various sorts of taxes on the motor vehicles themselves. This amount was segregated as follows: Federal taxes, $141,215,000; State license fee., $325,492,000; gas tax, $79,734,000; municipal taxes, $15,000,000; and personal property taxes, $90,000.

The percentages vary in individual States but for the Nation as a whole, the motor vehicle owners and the users of the roads paid some 47% of the entire road bill. Taking out the Federal tax on new cars and accessories, the amount provided by the motor vehicles is 35% of the total. This latter percentage would be increased by the amount paid by the users of the road in connection with the retirement of bond issues.

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YE EDITOR'S CORNER

We have "cribbed" the "Our District" article from Pooler's New Year's greeting and are publishing it without his knowledge or consent. It's a way we editors have. Why should he be permitted to give a good thing like this to D-3 alone? We are a compact Service, not an aggregation of units, are we not? Well, then!

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Wonder why Mr. Norcross didn't tell us how many miles of road we got for our billion eight hundred million?

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WASHINGTON NOTES

Extension Service Meetings: As the Service BULLETIN goes to press we hear reports of the very interesting meetings which are being held at the Department Office of Cooperative Extension Work by the Extension Service and the Forest Service. They were opened Monday morning with addresses by Colonel Greeley on "Farm-Forestry Extension in Relation to the National Program of Forestry," and by Dr. C. B. Smith, Chief of the Office of Cooperative Extension Work, on "The Extension Service of the Department of Agriculture."

Their purpose is (1) to consider the preparation of forestry extension programs, and the means and agencies capable of advancing such programs; (2) to promote the development of forestry extension along the lines outlined in the cooperative program of the Department of Agriculture with relation to the administration of Section 5 of the Clarke-McNary Law; (3) to assist the extension foresters to become acquainted with the Extension Service and the Forest Service of the Department of Agriculture.

Extension Foresters from all parts of the United States are attending and a very successful session is expected. We hope to have some more interesting things to tell you about these meetings in the next issue.

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Washington Visitors: Inspector C. M. Evans of District 4 has been detailed to Washington for a period of several weeks to work on the revision of the minor road manual.

Mr. John H. Hatton, Assistant District Forester in Charge of Grazing, is here on detail for the next two or three months. One of his first jobs will be to take up the compilation of a new public use book based on the present regulations.

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Shoemaker Goes to Albuquerque: Mr. D. A. Shoemaker, who was attached to the Washington Office of Grazing as an inspector, has been designated as Mr. Scott's successor as Inspector of Grazing in the Albuquerque office and took up his duties there about January 1.

Mr. Shoemaker spent the greater part of December in handling the meeting of grazing studies men at Ogden. In addition to the Assistant District Foresters in Charge of Grazing from each District, there were representatives of the grazing studies men from all the Districts. The time was spent in going over the various questions involved in range investigations reconnaissance and matters of that kind connected with the grazing studies work. From reports we have so far received the meeting was a very satisfactory one in every way and many matters on which the various Districts have been somewhat at variance were ironed out in a manner that justifies the belief that hereafter we shall have a greater uniformity in these two lines of grazing studies than heretofore.

Mr. R. R. Hill, Inspector of Grazing in D-5 for the past three or four years, has been selected as Mr. Shoemaker's successor in the Washington office. Mr. Hill will assume his duties in this office on March 1.

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DISTRICT 1 - NORTHERN DISTRICT

Lots of Lightning: A final check-up indicates that in District 1 the Service handled 1242 lightning fires last season. But one other season (1920) in 18 years of record shows so great a number of lightning fires. From this it appears that on the average about one year in nine the protection force will have to deal with some 1200 fires, even if man-caused fires are entirely eliminated.

A trifle less than 7 per cent of all the fires in District 1 reached Class C size last season, and still the loss was heavy and nearly 1/4 of 1 per cent of the net Forest area burned over. This is the heaviest loss since 1920.

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A Chance for Publicity: The Forest Supervisor at Orofino has received a letter from the Madison Lumber and Mill Company of Lewiston, Idaho, which is quoted below and which has in it a publicity idea that may be of general interest:

"In the next year and a half, we will be doing considerable advertising through an Olympic or Williamson advertising machine which is operated and lighted by electricity. This uses cards 14x14"which must be of thin press board.

"We will be glad to cooperate with your department regarding conservation and fire waste, etc., if you will prepare some of these cards for use. If you are not in position to do so but some other branch of your department is, will you kindly refer the matter to them?"

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DISTRICT 2- ROCKY MOUNTAIN DISTRICT

Timber Sale on the Minnesota National Forest: A sale of 700,000 feet of sawlogs and 165 cords of box bolts and pulpwood of the following species: oak, basswood, ash, yellow birch, white birch, aspen, elm, balsam, maple, white spruce, and white pine, has recently been made on the Minnesota National Forest. Of these species the basswood, yellow birch, ash, and oak are to be used for veneer, this being the first sale made on the National Forests in the Lake States where timber will have been utilized for this purpose. The rate on sawlogs is $8 for oak and dead white pine, $7 for yellow birch, white birch and ash, $6 for basswood, $3 for white spruce, and $1.50 for balsam, per M feet B.M. Box bolts and pulpwood are sold at 50¢ per cord, and fuelwood to be removed at the desire of the purchaser at 25¢ per cord, the length of haul to the railroad being about 3½ miles.

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Five Sections Planted on Michigan National Forest: A total of 3,200 acres was planted with two-year-old Norway pine seedlings on the Michigan Forest during the past fall. This exceeds the area planted in the fall of 1924 by 29 acres, which the local force was very anxious to do. However, the cost was greater, $3.36 for the planted acre vs. $2.94 in 1924. This greater cost was caused by the necessity of swamping out brush and moving down material so that the plow teams could drive through, and the inceeased supervision which was necessary because the areas planted were broken up by so much privately owned land. In addition, there was considerable idle time because of stormy weather;in fact, it was finally necessary to close the operations before the job was completed. There are sufficient trees on hand to plant an additional 1,000 acres next spring if funds are available for the job. The country planted contains scattered oak brush and jack pine, and 720 Norways were planted on the average acre.

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DISTRICT 5 - CALIFORNIA DISTRICT

Hazard Reduction on the Tahoe: When the new road circling Lake Tahoe was completed this summer, the increased travel naturally presented greater fire danger problems. The new road borders and passes through a cut-over area thickly covered with brush, thick pine and fir reproduction, pitchy logs and stumps, above which several miles of wooden flume lies threateningly exposed to any fire starting on the lower levels.

The owners of the land soon realized what would happen if a fire ever started along the road, with the prevailing winds from the lake driving it across the treasured area. The Forest Service took the first steps in protection last spring by making telephone connections with the patrolman maintained at Incline by the Hobart Estate Company and Virginia and Gold Hill Water Company, chief owners of the exposed area, and by bringing the interests of Washoe County, Nevada, and Hobart Estate Company together. The result was that the latter set aside seven acres of choice meadow, pine and lake shore land for use as a public camp ground, where campers are to be confined along the road, with camp improvements furnished by Washoe County. The improvement of this camp ground was completed - with the necessary tables, benches, garbage pits and latrines - this fall under the supervision of the Forest Service. The Hobart Estate Company mills furnished the lumber, and Washoe County met all other expenses.

When the Forest Service was ready to burn the 15 miles of road construction brush a proposition was made to the Hobart Estate Company to make a 15-foot firebreak on each side of the road where the main cigarette and match fire risk existed. This was brought to a successful conclusion during the month of October under Service supervision, with $800 cooperative money furnished by the company for the 5½ miles of firebreak work on both sides of the road and with the Service disposing of construction brush at its own expense.

In connection with the work, an experiment is being tried in killing manzanita and other brush sprouts by scorching them with a Hauck torch. It is believed that such a treatment in the spring of the year repeated when sprouts recur, will eliminate need of grubbing the stumps and be cheaper than grubbing, especially for firebreak work. Any improvement in this line will surely be welcomed by all brush stump grubbers.--H.I.S.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Black and White: Two contrasting letters recently received on the Rainier are quoted below. The first is from a summer-home resident referring to a proposed 50% increase in his annual fee. The second is from a grazing permittee who was requested by a circular letter to all permittees to forward the second installment of their grazing fee promptly as they were overdue:

"The 50% increase meets with my hearty approval and does not sufficiently remunerate your department for the excellent care and attention given us. Will be pleased to be at your proposed meeting to form an association for strengthening our mutual interests."

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"Your very discourteous note at hand. I never in my life have been asked for the same bill twice. I usually pay cash or always on receipt of statement.

"This is the first threatening letter I ever received on a bill five days overdue, and on a bill of less than thirty-five dollars.

"As far as discontinuing the two payment plan is concerned, I don't give a dam whether you do or not, but please show the same respect that you expect to receive."--E.J.F.

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A Log Saved is as Good as a Log Grown: Some Douglas fir loggers are practicing a high degree of utilization on their own lands. It will not be long before more are. For example, the Clark-Wilson Lumber Company, whose logging superintendent is Paul Freidig, an O.A.C. forest school graduate, (a) takes out the cedar poles in advance of logging, (b) makes hewed ties out of small firs, cedar and even hemlock, for spur lines, (c) falls all snags, and (d) gets much of its donkey fuel from tops, chunks and snags gleaned from the logged-off land and hauled to the railroad by horse and sled. Using this waste material for fuel looks like a big saving for it costs only $2 a rick of 3-foot wood, while merchantable logs if cut into fuel would stand the company at least $6 a cord. Such clean logging as this means less trouble with fire and is one of the prerequisites to getting natural reforestation.

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DISTRICT 8 - ALASKA DISTRICT

Tie Cutting for the Alaska Railroad on the Chugach is now in full swing. One hundred thousand sawn hemlock ties are being cut on Knights Island, in the Prince William Sound Ranger District, and are being delivered to Seward, the ocean terminus of the Alaska Railroad, by barge.

Sixty-five thousand sawn and hewed ties are being delivered along the right of way of the Alaska Railroad in the Anchorage Ranger District. It is gratifying to know that about 40 per cent of these ties will be sawn. No spruce material has been contracted for this year.--J.G.B.

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The King's English, as Mis-handled by the Aleuts: On a recent trip over his district Ranger Murray picked up the following English-Aleut gem from the files of a Prince William Sound sawmill:

> "Nov. 2, 1925
> Sawmill First Boss
> My Dear First Boss
>
> Please I want lumber now me built 2 house I have no time come my self please I want
>
> (Here follows a list of the desired lumber)
>
> Please please my Dear Boss sent me good I come my self next trip then I pay you anytime
>
> Yours very truly,
>
> CHIEF OF CHENEGA VILLAGE ALASKA."

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GRAZING AND WILD LIFE
By J. H. Hatton, D-2

Game lovers and enthusiasts, in the last year or two, have taken th position that the domestic grazing policy of the Forest Service is gradually eliminating or reducing the big game in the mountain districts. This took particular form in Colorado a year ago and several attempts were made through the press to convict the Forest Service of the charge. While the Service is taking the position that the whole question is largely one of winter range which, for the most part, lies beyond the Forest boundarie and beyond the control of the Service, a special study of the question was made by field men during the season of 1925. This study confirms the position first held, and we find that only in localized instances can it be said there is a conflict on the Colorado Forests between domestic stock and game. There is doubtless some incidental disturbance of game by the presence of herders, and others who care for the stock, but there is plent of summer forage for many more game than are at present using it. There is a real problem developing, however, in connection with winter range outside the Forests which is being gradually absorbed and controlled, and apparently this fact is going to limit the increase of game in the future, and steps will have to be taken in the next few years by the States and public to establish and protect winter feeding grounds outside the Forest boundaries. Special attention is being given to the limited areas of winter game range within the boundaries.

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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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THE CONFERENCE OF EXTENSION FORESTERS

By G. H. Collingwood, Washington

A conference of foresters discussing anything but forestry seems impossible. Yet that is largely what happened on January 11, 12, and 13, when the Extension Foresters and representatives from twenty-three States were in Washington. The conference was arranged jointly by the Extension Service and the Forest Service of the Department of Agriculture. These Extension Foresters are all members of the Agricultural Extension Service of their State, and their work has been stimulated by, if not actually established as a result of, passage of the Clarke-McNary Act. They came to Washington primarily for the purpose of getting acquainted with the Department of Agriculture and the two bureaus with which they are intimately attached. The program was arranged with the idea of first introducing them to the organization, and then telling them how to use it.

On Monday morning Colonel Greeley briefly traced the development of Federal cooperation with the State Forestry organizations, through the Weeks Law to the present development under the Clarke-McNary Law. He called attention to the more or less simultaneous development of the Agricultural Extension Service, and urged the fullest cooperation between the Extension workers and the State foresters. Four ideas were set forth in this talk which colored the subsequent discussions,- (1) that forestry should be made a part of the "land sense" of the American people; (2) to take the mystery out of forestry, and not try to put over something technically perfect all at once, but start out with what farm people already know and have worked out for themselves along common sense lines; (3) to express forest values to the people in common, everyday, homely figures of speech that bite in; and finally (4) to convince landowners that there is value in young growth.

Dr. C. B. Smith, Chief of the Office of Cooperative Extension Work described the Extension Service of the Department of Agriculture, and the relation which it bears to the Agricultural Extension Services of the several States. He pointed out that the Extension Foresters are a part of a great national educational organization numbering 4883, of whom 977 are subject-matter specialists more or less like themselves and 3432 are county agricultural agents, home demonstration agents, and junior club leaders. To support this organization Congress appropriates annually nearly $6,900,000, which is matched and further supplemented from State and county sources to the amount of more than $12,500,000, making a total of nearly $19,500,000.

To say that the men listened to talks on extension methods of teaching, the building of a forestry extension program - together with ways and means of getting that program adopted - boys' and girls' club work, exhibits, and motion pictures would imply that they sat quietly, with pencil and notepaper before them and listened. As a matter of actual record, it would be more nearly true to say that these subjects were discussed by the entire group. It all sounds as if it were removed from forestry, but actually each was considered in relation to its effect upon satisfactory extension teaching of forestry. Occasionally there arose discussions concerning the size of tree stock used for planting windbreaks in Iowa as compared with that used in Minnesota, or the menace which arises from disrespect for fire and ignorance of the value of young forest growth, but these automatically resolved into a discussion of the ways and means of correcting the condition.

Forestry work with boys and girls through the 4-H Clubs met with a hearty interest from everyone. All recognized that this channel offers a remarkable opportunity for getting a widespread acceptance of forestry principles. Reports from the men indicated that New Hampshire is taking the lead in the amount of forestry work now being done with young rural people, but a number of the other States may be counted upon to make progress during the year.

Committees prepared reports on the making of a forestry program, the plan of work for carrying it out, forestry work for boys' and girls' clubs, and suggestions for more effective cooperation with the State Foresters and other agencies within the State. These reports are to be mimeographed and will help to guide forestry extension activities in all the States.

Each of the men expressed the wish that this conference may be the forerunner of many others, and that more time should be allowed for discussing forestry as well as the means of teaching it. We hope that this may be carried out in the form of regional conferences in cooperation with the forestry research workers. Such conferences would be most helpful during the field season when the somewhat academic discussions concerning silvicultural problems could be supplemented by observation, and the two groups would find that they have much in common.

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PROJECTING JOBS VS NIBBLING

By W. B. Rice, Payette

National Forest activities are divided for accounting purposes into 29 items. These various activities, however, are in most cases a combination of several jobs which have to be treated or acted upon separately by local Forest officers.

Grazing administration dissolves itself into range inspection, salting and distribution plans for cattle, deferred and rotation plans for sheep, feed lot counts, trail counts, trail posting and supervision, and so on.

Improvement maintenance covers telephone lines, trails, roads, fences, buildings and numerous other items.

The splitting of all activities into their component parts results in a surprising number of activities that the average Ranger is required to look after and for which the supervisory force is held accountable for progress.

It is little wonder that many of these items are forgotten, overlooked or sloughed from year to year, or that Forest officers often become confused in attempting to organize their time so as to cover them all. Often the same job is crowded out year after year by the pressing need for taking care of more important jobs when as a matter of good and all-around administration the lesser job should in some manner be taken care of. Careful and systematic planning is essential and much progress is being made along that line, but the plan work is lost unless it is followed by action in the field.

Business recognizes turnover as one of the largest wastes in industry, and it is no less true of the Forest Service. Changing an employee from one job or one kind of work to another is only a modified form of turnover but the loss is still there. It follows that when a Ranger jumps from one job to another in endless succession that we will still have this same element of loss, which has not been given sufficient recognition. There is a loss in accomplishment and also in thoroughness. The average man cannot adjust himself either mentally or physically to too frequent changes of occupation and give each job the care and thought that makes for substantial progress or to anything except just getting by.

It seems necessarily true that a cutting down in number of jobs to be handled will increase the efficiency of those actually covered and that the gain will be more far-reaching than merely the giving of more time for each of fewer jobs. Much of our work is routine which must be handled on an annual basis, but there is much that is now handled on an annual or nibbling basis which could be better handled on a project basis. Each year each Ranger is supposed to post a few miles of boundary, post a few signs, paint a building, work over a few miles of telephone line and trail, and spread himself out thin in general and the net result has a thin look. Even the

Ranger himself would have difficulty in measuring the net progress and it is even more difficult for inspectors to do so.

As an organization policy I believe that all jobs that lend themselves to being handled on a project basis should be handled in that manner, and any job that will stand for a period of years can be made a project. Instead of nibbling at a half dozen different jobs in one season, pick out the one most in need of attention and handle it as a job to completion and let the rest go. The others could then be taken up in their turn and carried through to completion. Some jobs would necessarily suffer for a year or two, but in a few years a rotation of jobs would be established which would increase interest and efficiency and make it easier to measure and determine accomplishments, and at the same time give the forest worker the mental exhilaration of knowing that he is squarely on top of one job instead of being perpetually in doubt over the entire list.

FOREST FIRES AND FERTILIZER

By W. R. Mattoon, Washington

How much is the organic matter of the forest floor worth? As one of the items of money loss by fire in the woods we must include the loss of humus, or, in the farmer's language, vegetable matter. Do we have at our finger tips information as to the value of the organic or vegetable matter?

In his article on "The Conservation of Fertilizer Materials from Minor Sources," in the Agriculture Yearbook for 1917, C. C. Fletcher, Associate Chemist of the Bureau of Soils, gives the percentage of fertilizer materials contained in oak leaves. On this basis a ton of oak leaves contains:

Nitrogen (or ammonia) ($NH3$)	16	pounds
Phosphoric acid (P_2O_5)	7	"
Potash (K_2O)	3	"

In a recent telephone conversation with the writer, Mr. Fletcher stated that pine needles, or straw, contain approximately the same amounts of these materials as oak leaves. Based upon the experience of the writer in hauling away the yearly accumulation of four oak trees growing in near-by Maryland, it is estimated that on an acre two tons of leaves fall to the ground yearly from a well stocked oak stand. It is likely that pines shed less, also the intolerant trees, such as the ash, black walnut, and black locust. The very tolerant beech is known to have a very heavy foliage.

How much is the yearly crop of oak leaves worth per acre? Nitrogen, or ammonia, costs the farmer at wholesale rates from 12 to 20 cents per pound, phosphoric acid about 5 to 6 cents, and potash at its present very low price about 5 to 6 cents. Two tons of oak leaves from one acre are therefore worth for fertilizer:

Nitrogen .... 16 lbs. x 2 = 32 lbs., @ 15¢ = $4.80
Phosphoric acid ..... 7 " x 2 = 14 " " 5¢ = .70
Potash .... 3 " x 2 = 6 " " 5¢ = .30
$5.80

The yearly crop of oak leaves on an acre is worth $5.80 for fertilizer.

In the burning of leaves it is known that little or none of the phosphoric acid or potash is lost, but remains in the ashes. The vegetable matter would, however, be a total loss. Allowing for some natural loss in the nitrogen by leaching and volatilization, if the woods were not burned, the figure of $5.30 given above should probably be reduced to $4.50 or $4.00 per acre.

Four dollars probably represents conservatively the money value of the fertilizing element that goes up in smoke and gas when a single year's crop of oak leaves on one acre burns. With an accumulation of 4 to 6 years of organic matter on the ground - undecomposed and decomposed - and an average value, say of $3 due to natural loss in that time, a fire would easily destroy a value of $12 to $15 an acre. This does not take into account the indirect damage resulting from the removal of the spongy protective soil covering with the consequent compacting of the soil and damaging erosion from run-off of rainwater on hillsides.

We have mentioned in past issues the activities in various Districts of local lodges of the Benevolent and Protective Order of Elks. Now comes Grand Exalted Ruler Hawley in one of his first official circulars calling on all lodges, among other things, to join with him in supporting "A resolution introduced by Ogden, Utah, Lodge, calling upon the Order at large to join in the use of every precaution for the prevention of forest and prairie fires was passed."

Now if we can only get the Lions, Rotarians, Civitans and Kiwanis to do likewise we will have done a good job. We presume some good PR man is at the bottom of this.

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YE EDITOR'S CORNER

If you haven't read "Colly's" account of the Extension Foresters Conference, go back and read it. Kylie asserts that one of the best ways of helping to establish a "land sense" is through the fairs - Forestry buildings at fairs, and the Editor, who was at the conference, was much impressed with the analytic method of attacking extension problems and the surety with which these extension chaps go forward toward their objective because of this analysis. It was good!

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Did you read Brother Rice's "Projecting vs. Nibbling?" Seems as if we knew some old-timers who are nibbling off a lot of work every year and who would be willing to tell us about it.

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Fail not to peruse "Matty" on Oak Leaves; it's good selling talk.

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In re - visits of Old-Timers (Wash. Notes) Lee Kneipp, A. F., who smokes all-tobacco cigarettes and thinks straight in spite of them, kicks in with this: "Why not open your magazine to some of the Old-Timers, they've got lots of interesting stuff." We said: "Great!" - And now she's open - We hereby establish an "Around the Campfire" section for the garrulous veterans, and now all we've got to do is "try and get" some contributions. The Editor's lot is a merry one.

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WASHINGTON NOTES

Junior Professional Examinations: A request for the holding of the Junior Forester and Junior Range Examiner examinations has been sent to the Department. The examinations will be held as usual in March. We have asked that the Junior Forester examination be held on March 10 and the other two weeks later instead of on successive days as before. It is found that the forest school men taking both examinations are strongly in favor of having an interval between the two. The announcement will give clear definitions of the subjects. A new feature of the Junior Forester examination is the requirement of a thesis as a ratable subject. The announcement will say that a thesis of 2,500 or 3,000 words is required and may include the results of some original investigations made by the applicant or may represent work done by the applicant in collecting and arranging facts relating to some phase of forestry of his own selection and drawing proper conclusions from these facts. The age limits in both examinations are changed to 21 to 35 years.

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The Board of Surveys and Maps held an open and also an executive meeting on January 12. The most important information gained from this meeting was that Congressional action in the House will make it impossible for the Geological Survey to make any topographic surveys on the National Forests next year. An election of officers was held. Mr. Wheat was reelected Secretary. Colonel Birdseye was elected Chairman to succeed Major Boyle and Mr. Norcross Vice-Chairman to succeed Mr. Kidder.

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Time Won't Tell: During the recent visits at the Atlantic Building of out-of-town foresters while in the East attending the forestry meetings at Richmond, there gathered together three of our old-timers, R. H. Charlton, E. T. Allen, and Miss Adams, workers who had seen service in the building over 20 years ago, and who had not seen one another in that length of time. Their reminiscences reminded them of their change in beauty, acquisition of dignity, and graying of hair, when one of them remarked that the only man in the Forest Service who didn't seem to grow grayer was Joe Santucci, our Service printer. Just at that moment Joe himself stuck his head in the doorway in time to overhear the remark. Swelling with pride and shoving his thumbs under his suspenders, Joe calmly looked over the group and said, "Well, I'll tell you; my hair keeps black handling so much mimeograph ink in that room downstairs."

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DISTRICT 1 - NORTHERN DISTRICT

Log Transportation - Railroad vs Driving: In connection with the District mill-scale studies last summer, two distinct runs of logs were secured at the Rose Lake mill of the Winton Lumber Company. Both of these consisted of second-growth white pine from the Coeur d'Alene Forest, but the logs in the first run were driven to the mill, while those in the second were brought in by railroad. The object of the extra run at the same mill was to obtain accurate data as to depreciation in grade and value resulting from transporting logs by water.

Most of the progressive lumber companies are able to measure fairly accurately such disadvantages in driving as loss of logs due to sinkers, strays, etc.; the added interest charge because of the seasonal nature of such transportation, and other tangible factors. Actual depreciation in the value of the product which reaches the mill is much more difficult to determine and is generally underestimated. The results of the mill-scale study are, consequently, of real interest and show a very startling condition.

Three factors account for the difference in values. There is the actual depreciation in lumber grades produced from driven logs. The railroad logs produce more overrun, and a third factor is additional defect caused by driving, which must be scaled out of the log and which, therefore, is not otherwise reflected in comparative values. Briefly, the results are:

	R.R. logs	River logs	Difference
Mill-run value, per M' lumber tally ...	$49.60	$45.30	$4.30
Weighted av. overrun, #5 & Btr.	27.39%	26.38%	1.01%
Av. value per M' log-scale basis	$63.18	$57.27	$5.91
Average value per M' log-scale basis with per cent of surface and operating log defects included	$63.05	$57.00	$6.05

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Water in Demand: In California there is a very intensive demand for water, according to District Engineer J. P. Martin who has returned from a trip to District 5. Irrigation is very intensive and practically all the streams flowing out of the Sierra Nevada Mountains are filed upon, even to the flood waters. In fact, the situation is such that in some cases a man only gets water one year out of three. On top of this heavy demand for irrigation, which is of long standing, now comes the need for water to develop power, involving large storage projects which interfere very materially with the water rights to flood waters. Irrigated farming is necessary, but power development is also required for the proper development of the country and a very difficult situation is being presented.

Mr. Martin visited a number of power plants with Mr. Bonner, District Engineer in District 5, and was especially impressed by the number of high concrete dams that are being erected.

In southern California on the Angeles Forest, watershed protection is a question of paramount importance. Every ridge has its firebreak running along its top and a careful watch for fire is maintained. Watershed protection is absolutely sold to the farmers and they turn out in full force whenever smoke is sighted in the mountains.

At the time Mr. Martin was there the San Gabriel River was dry. Nevertheless, there is keen competition for rights to flood waters and for dam sites on this dry river, for after heavy rains large quantities of water come down which at the present time serve no useful purposes.

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How Fred Call, the Newspaper Man, Saved the Tree: "Fred Call, a National Forest fire guard on the Weiser Forest, recently *saved* a giant tree by crawling into the hollow part, which was aflame, and cutting away the burning wood. *First he chopped the tree down*, then took a shovel and hatchet and crawled inside, carrying out shovelful after shovelful of flaming wood."

In case you fail to get the humor of the item, we are underscoring certain portions thereof.

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DISTRICT 5 - CALIFORNIA DISTRICT

The Year 'Round: The Stanislaus is about ready to be classed with the Angeles, Cleveland, and Santa Barbara in the matter of fire season. The Mt. Provo fire started when the Ranger was on annual leave on December 13. It was reported to the Forest Service on December 15. The fire was in rough, much-burned country, and it took two days and nights to get it under control. In places the fire line was dug through frozen ground. Sometimes the fire would go out; at other times it would burn like a fire in August. Burning chunks and cones rolled just as far and set just as many fires as in the summer.--R.M.R.

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Mr. Redington Honored: District Forester Paul G. Redington, together with Horace M. Albright, Superintendent of Yellowstone National Park, and Harry Babcock of San Francisco, has been selected to receive the honors of life membership in the Sierra Club in recognition of distinguished services extending over a number of years in promoting certain of the primary objectives of the club. Mr. Redington was chosen for this honor for valuable services performed in superintending the construction of a considerable portion of the John Muir Trail in the High Sierras, and for his notable achievements in fire prevention in the forests of California.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Valuable Contacts A conference of the High School leaders of the State was held recently at the University of Washington. Supervisor Weigle appeared before the conference and through their press division secured a resolution to carry a forestry column in their High School papers. They expressed an especial desire for articles of human interest from the Forest Service.

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Fire Notes: Ranger Garwood, in the Hebo District Siuslaw Forest, sends in the following summary of law enforcement and prevention work on his district:

Number of burning permits issued	579
" " court cases	24
" " convictions	23
Fees and costs collected amounted to ..	$726.30

Among the list of those who paid fines for violation of the fire laws are mill men, loggers, contractors, farmers, the proprietor of a health sanitarium, a representative of Tillamook County, and a representative of the State Highway Department. Impartial law enforcement, without fear or favor, has been carried on in this district in a very satisfactory manner.

Service Bulletin

U. S. FOREST SERVICE
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TECHNICIANS AND OTHERS

By Hugh G. Calkins, D-3

A long-existent but somewhat haphazard plan of absorbing technically-trained men has resolved itself into a Service policy that calls for the regular annual influx of a fairly definite number of such men. Pronouncements on the subject have, in some quarters, been interpreted as spelling the doom of the nontechnical man, but a brief examination of the facts will show that no such gloomy view is justified. In certain western regions, at least, where human relations play so prominent a part and where ability to meet the nester, stockman, lumberjack, is all-important, there will always be many places best suited to nontechnical men with the initial advantage of speaking the local language and many opportunities to better their positions through the several open avenues of training. Moreover, a glance at present Service tendencies ought to show that this training business has no more than fairly begun. True enough, the technically-trained recruit has certain advantages by reason of his schooling (recognized by somewhat higher entrance salary) but at the same time he must frequently overcome the handicaps of lesser experience, strange environment, and the need for unlearning certain fondly-cherished ideas.

If there were a stated policy - and there is not - of making over the Service into a sort of postgraduate institution of higher learning, it would be predestined to failure. Look at the history of the Service - of the technical and "practical" men who have advanced side by side on up through the rank and file, first one and then another forging ahead or falling behind - and be reassured.

The canny Supervisor, however much he may appreciate the need of infusing technical blood into his Ranger force, might well shudder to think of having to run his Forest without those steadfast, dependable men whose value in large measure is the result of experience. It is a healthy sign of the times that there appears to be increasing effort to place technical men in administrative - Ranger - work, not so much for training as for a trial of strength in fair competition with their fellow-workers. The contact should result in about equal benefit to everyone concerned.

It pleases me to think that the strength of the Service largely lies in the diversity of its personnel - in its widely different rather than uniform types of men. Try to think of running even a single Forest with Rangers all of one stripe. The Rangers are said to be the key men but, praise be, these human keys need not be "Forest Service Standard." They must be strong and well-fashioned, but not of uniform pattern.

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GATHERING IN THE COSTS

By L. T. Mahurin, Washington

As the annual cost statement for the fiscal year 1925 has now been furnished and we hope has not yet been gently "tucked away" in the files, it may be of some interest to review briefly the methods used in assembling the information for the report.

The mechanics of gathering cost data starts from the moment the Ranger or other Forest officer sends in his expense account, service report, time slips, etc., showing to what activities the expenditures are chargeable. These cost distributions are received in the District Fiscal Agent's office, and item by item the figures are punched on small cards by appropriations, activities, Forests and Budget code symbols.

The punching is done with a small machine with a keyboard operated somewhat after the manner of a typewriter. A separate card must be punched for each appropriation, activity, Forest, Budget code symbol and amount involved. For instance, a Ranger's expense account payable from General Expense and charged to 5 activities would require probably no less than 10 punch cards. After punching, the cards are run through a verifying machine, which is operated in the same manner as the punch card machine, where any inaccuracies in punching are detected and corrected.

In the neighborhood of 300,000 of these punch cards are received in the Washington office for a fiscal year and constitute the record of cost distribution of the Forest Service.

The work of sorting these cards by activity, Forest, appropriation and Budget symbols is done by an electrical machine which makes the sorts desired by electrical contact through the small holes punched for the various groups. For instance, in order to sort the cards into appropriations, the cards must pass through the machine twice. To then sort the cards into organizations or Forests, they must pass through the machine twice more. In the course of checking and compiling the cost statement, the 300,000 cards or summaries of them pass through the sorting machine at least 40 times at the rate of approximately 250 per minute. It is easy to figure out about how long the job is going to take, barring mishaps.

After being sorted as desired, the cards are then run through a tabulating machine, which is a battery of 5 adding machines, so controlled that totals are taken off the punch cards as they pass through according to the groups that have been arranged by the sorting machine. From these tabulations the costs are checked and the annual statement prepared.

While, from this point on, the preparation of the statement is one requiring other than mechanical methods, yet the adding and computing machines play an important part. The prorating of overhead items to the productive activities is a long and tedious task, and without a computing machine that will multiply and divide many times faster than the human mind the task would be overwhelming.

While in all this mechanical handling of enormous volume there is plenty of chance for error, it is nevertheless true that the accuracy of the cost statements depends primarily on the accuracy of the original distribution of time and other charges to the activities. The effort to obtain accuracy in these first charges becomes doubly important when it is realized that they are used as the basis of prorating the large volume of overhead costs.

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MY DISTRICT

A Forest Without Trail or Trout

By [illegible] Simpson, Custer

The Custer National Forest - District 1 - located or scattered, in southeastern Montana and northwestern South Dakota, is a consolidation of the Cave Hills, Slim Buttes, Short Pines, Long Pines, Ekalaka and Otter Forest Reserves which through various changes of administration are now consolidated into the Custer National Forest with Supervisor's headquarters in the Federal Building at Miles City, Montana, the home of the world's most famous range horse sales yards which Theodore Roosevelt attended while ranching in North Dakota. Our offices are spacious and well kept, our town is of some 9,000 population with two transcontinental railroads and all the modern conveniences that are found in the up-to-date towns of the West. The city was named in honor of General Nelson A. Miles, who was in command of Fort Keogh from its founding in 1872 for many years. Fort Keogh is west of where the city is now located.

The Custer Forest is a series of isolated plateaus some 400 to 500 feet above the surrounding country and covered with a pure stand of western yellow pine, no other coniferous species being present. All of the topographic characteristics of a mountain range are present in a fine pattern, while practically all parts are readily accessible by motor or wagon. Our streams are alkaline and intermittent, hence our title of "Without Trail or Trout." Within our confines neither is existent. Our activities are intensive and varied - 366 grazing permits, 339 timber sales, 90 per cent S-22, and 258 special use permits indicate the volume of our activities. The Forest has seen some 450 settlement cases and is so intensively settled that our zone of grazing dependence is the exterior boundary of the several divisions. Much has been written of the intensive grazing use of the Cache National Forest in District 4. As a parallel we offer the intensive utilization of timber products on our South Dakota districts. Restriction is made of distribution of timber under Regulation S-22 to one cord of mature timber per permittee per year and often our allowable annual cut is exhausted within six months. Utilization includes use of the limbs and stumps. There is no brush left to be scattered or burned. All of these districts are managed under an intensive Silvicultural Management plan, and our Rangers are grounded in the technical phases of forestry. Twenty-eight thousand cattle and 5,000 sheep find summer pasture on our ranges.

Fire hazard is normal, but suppression is quick due to the excellent cooperation of our users. Lightning causes 60 per cent of our fires. Ordinarily we are a busy bunch and our organization consists of a Supervisor, Assistant Supervisor, Junior Forester, two clerks, eight Rangers and a cooperative employee with the State of South Dakota who gives his time equally to the Forest and the State.

Our travel is excessive, our nearest ranger station is 77 miles, and to "cover" the South Dakota District over 500 miles of travel is necessary. Hence our effectiveness is depreciated by our excessive "job to job."

YE EDITOR'S CORNER

Calkins' "Technicians and Others" suggests a topic which might be interestingly discussed pro and con in our BULLETIN. Only the softer and less dangerous bricks should, of course, be used.

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Doesn't Mahurin's description of the way D. 1. finally arrives at costs remind you somewhat of a threshing machine?

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We are timber farmers. Our job is to raise an annual crop of trees. Mr. Wernicke says we should be timber minded. These wheat and furniture and motor minded people talk it in their sleep. Why shouldn't we?

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Sh---h!!! How quietly Cochran speaks of D-2's cooperation with Michigan and Minnesota. "The Forest Service cooperates," he says. Can't you imagine that D-5 bunch reporting the same thing for D-5? ----- But hold on a minute. We didn't think of this till just now. Maybe Cochran thinks D-2 is the Forest Service. These modest folks are oft-times very subtle.

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WASHINGTON NOTES

Scientific American to Feature Forest Conservation: The Editor of Scientific American tells us that the first of a series of conservation articles to be run in that periodical will be one on the conservation of the Forests in the April number. We have furnished the pictures, and it is to be written by J. Bernard Walker, Editor Emeritus of the magazine.

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Supplemental Road Appropriation: The Budget Bureau has submitted our supplemental Forest road appropriation of $3,775,000 to the House Committee on Appropriations, with favorable recommendation. Nothing further has been heard of action by the Appropriation Committee on the appropriations for the fiscal year 1927.

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Do "WE" Know that the SERVICE BULLETIN is a "Current Publication?" Once again we call the Editor's attention to certain issues of the Official Record where under the heading "Articles by Department Workers in Current Publications" it appears that Forest Service people furnished an overwhelming percentage of such articles. The explanation of this is simply that the Forest Service holds up its list for a month and then shoots it to the Official Record all at once. Hence once every four or five weeks you will find one issue of the Official Record that gives us this overwhelming percentage. But it cannot be denied that the Forest Service does furnish far more than its proportionate share of articles. We are writin' fools! And the Department as a whole knows it.--M.H.

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DISTRICT 1 - NORTHERN DISTRICT

An Extension of Tree Planting Work by the Forestry School of the University of Idaho is now possible as a result of an agreement which Dean F.G. Miller has just entered into with the Secretary of Agriculture. This agreement provided by the Clarke-McNary forestry law permits the Federal Government to give financial assistance in growing and distributing forest trees for planting on farms in shelterbelts, woodlots, etc. The Federal Government will bear fifty per cent of the cost of this work during the present year in Idaho.

The forestry school at Moscow has maintained for a number of years a small but thriving nursery. Seedlings have been furnished at cost to residents in all parts of the State. As a result of the new arrangement with the Secretary of Agriculture, an even better service of this kind will now be possible.

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Dr. C. A. Schenck of Darmstadt, Germany, whose name is a household word with all Foresters, is giving a series of lectures at the University of Montana this winter. Through the courtesy of the University of Montana an opportunity is given to men in the Forest Service to attend these lectures. Nearly all of the men in the District office are taking advantage of the offer. Dr. Schenck is giving an extremely interesting and stimulating series of lectures, which include silviculture, economics, and a little philosophy, all blended together by the Doctor in an unusually interesting and stimulating form.

The course comprises six lectures a week for a period of about three months.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Special Exhibit Train to go Through Michigan: The Forest Service is cooperating with the Development Bureaus, the Department of Agriculture, the Department of Conservation and other agencies in Michigan in equipping a Fire Special which will be routed through both the Lower and the Upper Peninsulas to emphasize the necessity of better fire protection in the State. One or two cars will be devoted to exhibits which the Service is helping prepare and install, and other cars will be for lecture room and for living quarters. The itinerary includes 25 stops in the Lower Peninsula and approximately 50 stops in the Upper Peninsula, so that several weeks will be required to complete it.

According to present plans, slides or moving pictures will be shown and talks made by members of the party at each of the more important towns. Written material, buttons, etc., will be distributed.

While it is too early to predict the success of the project, its initiation is evidence of the growing appreciation in Michigan that radical steps will be required to bring the fire damage down to normal. In 1925, an exceptionally bad season was experienced in which more than 3,800 fires were reported and more than 700,000 acres burned.

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Forestry to be Taught in Wisconsin: The Superintendent of Public Instruction in Wisconsin announces his intention of teaching the various branches of conservation in the schools of the State. His plan is to reach particularly the pupils of the 7th and 8th grades because of the smaller enrollment in high schools. Information is being sought from all States which have attempted courses of the sort, and it is probable that text books will have to be prepared by the Superintendent of Public Instruction for lack of suitable ones on hand. The Forest Service is trying to assist him in gathering material and in presenting forestry in the proper light.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Discord in D-4: Up in the western yellow pine belt last summer, a certain District office man, accompanied by a pair of timber beasts, commonly known as Junior Foresters, had his attention diverted from the bowl of his pipe to a peculiarly tapering bole of a particularly fine specimen of pine. It was during a "5" and the bowl of the pipe having been replenished and the smudge kindled therein, a discussion arose as to the contents in ft.

B. M. of His Resinous Majesty. The argument waxed to the point where discretion was cast to the four winds and a wager was laid as follows: The timber beasts maintained that the third log, reading from the ground up, would scale more than the butt log, while the D. O. man took the opposite view - $5.00 worth, in fact. This tree, in due course of time, felt the bite of the cross-cut and ax and when the tree lay prone in the needles a careful and conscientious scale was made of the logs in the tree. (By the timber beasts, for the D. O. man had long returned to Ogden when this happened.) The official stick found the following facts, which were entered in the book: That the third log scaled 1070 feet and the first log 1030 feet, and now the D. O. man charges conspiracy, collusion and other crimes on the parties of the first part and refuses to fork over the aforesaid wager, for these and other vital and fundamental reasons, including, we understand, a charge that the third log was cut at a big limb and scaled on the end instead of back before the swell begins.

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Embarrassing? No! A District office meeting was recently held at which all offices discussed their own work plans for 1925, showing what they had outlined at the beginning of the year and how well they followed their schedule. In most cases, it was found that working plans had actually worked and that they had been followed with good results. The amount of work laid out to be accomplished during the year was practically completely done, and usually it was accomplished at the time originally planned. The officers visited the field much more closely on schedule than ever before. Plans for 1926 are beginning to be developed at the present time.

The District Office bunch feels that working plans have certainly made good as far as they are concerned, and find that a general get-together and discussion of them is of great help in planning future work. Time spent on plans is certainly wisely spent.

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DISTRICT 5 - CALIFORNIA DISTRICT

Deer on the Sierra: Contrary to the popular cry that Forest officers often hear from disappointed or amateur hunters to the effect that "big game, and especially deer, will soon be exterminated if better protection is not given them," I am convinced that deer on the Sierra have increased very materially during the past 20 years.

I have just returned from a trip to the South Fork of Merced River, where I spent a couple of days with Park rangers, distributing salt on the winter ranges of deer that summer principally in the Yosemite National Park. The Park Service furnished the salt and we put out 400 pounds adjoining the southwestern boundary of the Park. They have already distributed 600 pounds along the western border this fall, making a total of 1,000 pounds. I am sure that four or five times this amount would be cleaned up by the deer if it were distributed systematically over that area of a couple of townships.

Ranger McLeod and I placed about 400 pounds of salt on a portion of this area two years ago, and I found on visiting these places last week that in most instances they are easily recognized by the deep holes that have been pawed out by the deer in their efforts to get salt.

In one day's travel of perhaps 15 miles, where I estimate we saw some fifteen hundred acres, we counted more than 200 deer - or an average of one deer to each seven acres. Of course, the deer have not increased on other portions of the Forest in the same ratio that they have here because in the Park no hunting is allowed, but I know from personal knowledge and observation that there has been a material increase on most of the Forest. The only exception is the country immediately adjacent to big construction projects or where large areas have been clean cut and logged.

The experience of the foot and mouth control measures on the Stanislaus has convinced me that our old estimate of 10,000 deer for the Sierra Forest is perhaps not more than half as high as it should be.--R.B.

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Broomtail Reconnaissance: During the past field season the extensive grazing reconnaissance crew on the Stanislaus examined 969,400 acres at a cost of $0.00322 per acre. The work was done on horseback and approximately 8.5 sections were covered on each effective field day. U.S.G.S. quadrangles enlarged to a scale of two inches to the mile were used as a base for mapping and control.

The urgency for carrying capacity figures to be used in 1926, when stock will presumably be admitted to the forest again, was the reason for the very extensive method of examination. Due to the fact that there are large areas of waste range and types of low carrying capacity, such a system was applicable and proved satisfactory.--R.W.B.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

The Colville - It Screams! The last item on page 12 (D-6 items) of Service BULLETIN of Jan. 4, carried an egregious error. It read, in part, "One day last summer the Deadman Creek road crew on the Colville Forest were peacefully sleeping"! The Supervisor, the District Ranger, the Deadman Creek Road Crew, in fact, the entire personnel have arisen in righteous indignation and are now screaming!

They on the Colville never sleep in the daytime, and during "the field season" only occasionally at night!

The Editor accepts the buck and herewith and hereby attempts to right this wrong. The sentence should of course have read "One NIGHT last summer when the Deadman Creek road crew were trying to catch a little needed rest, etc." The regrettable, and to the Editor, puzzling feature is that the Colville lads should have to rise to their own defense. --Ed.

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Hail! Beavers: It has been noted that beaver engineering activities on the Fremont Forest have been beneficial in a number of places where comparatively unproductive sagebrush areas have been made over into grass and sedge-covered meadow types, which will furnish considerable food. We stand 100 per cent for beaver protection.

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DISTRICT 8 - ALASKA DISTRICT

New Boat for the Chugach: Late last fall, construction was started at the Lake Union Drydock and Machine Works plant in Seattle on a new boat for the Alaska District destined for the Chugach. The "Chugach," as it is now named, was built on Service specifications in exchange for the "Hiawatha," a boat in our possession for sometime, which however was not adapted to our needs. The new craft is 60 foot long, roomy, comfortable, built along the general lines of the smaller Ranger boats on the Tongass, except for having a round instead of square stern, and altogether seaworthy. This will be the first boat the Chugach can call its own.

The contract covering the exchange did not include an engine. Since lack of funds forbad the installation of an engine in Seattle during this fiscal year, it was necessary to tow the hull, upon its completion, to the Service Marine Ways at Ketchikan. Accordingly, the Bureau of Public Roads motor boat "Highway" was chartered on November 10 to proceed to Seattle from Juneau.

The trip down consumed one week and proved to many of the crew that winter travel in a gas boat, especially while bucking southeast gales, was not good for weak stomachs. The return trip encountered ideal weather and took eight days with the tow to Ketchikan and another day and night to Juneau. In round numbers, following the course taken by the "Highway," the entire trip covered some 1,800 miles.--H.S.

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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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AROUND THE CAMP FIRE

An Old Picture

By L. F. Kneipp, Washington

It lay on Sherman's desk the other day; probably one of the first of what was eventually to be a large collection of Forest Service group photographs. G. P., sharp of eye and profuse of mustache, occupies the center of the front row, with Albert F. Potter, not a day younger looking than he is right now, on his left, and Seth Bullock, the "Sheriff of Deadwood," then Supervisor of the Black Hills, on his right. Siding Bullock is King Wade of the Gila, long since gone to his reward, his massive figure radiant with senatorial dignity. As a background stand Ben Crow, then of the Angeles; Dan S. Marshall, then Supervisor of the Uinta, but now in the happy hunting grounds; "Bobbie" Miller, then and for many later years Supervisor of the Teton and Nestor of Jackson's Hole; Sherman of the Bitterroot, his placid countenance showing little of the rugged pulchritude which later has been a justifiable source of pride; Kneipp of the Pecos, his juvenile countenance but recently released from an impressive Van Dyke beard, giving a touch of youth to offset the mature severity of the aggregation; and Mainwaring, then and now of the Sierra. Allen of the Rainier also should have been there, but an outbreak of fraudulent mining claims had called him back to his beloved Puget Sound.

It had been a bewildered bunch that had found its several ways through the old Pennsylvania R. R. depot, paused to observe the star marking the spot of Garfield's assassination, inquired anxiously as to the whereabouts of the Atlantic Building, and hastened to report. Few of them had previously been east of Chicago, and few of them had a very clear idea of why they were then east of Chicago. It was true that the call had spoken briefly of a revision of the Use Book, but who had ever heard of a field man having any part in such a process, and why was it necessary anyway to revise a publication only six months old and the very last word in progressive procedure?

Under G. P.'s magnetic leadership, supplemented by that of Overton Price, the group progressed spellbound and voiceless from office to office, dividing their eyes and attention between the maps and charts which G.P. was elucidating and the great profusion of beautiful stenographers, to whom they obviously were objects partly of curiosity and partly of merriment. This initiatory process completed, they found that after all nobody had been kidding them; they really were expected to revise the Use Book; and in the wholly unappreciated detachment and isolation of a big room they settled down to the job. Then came the big day.

They did not know that the western stockgrowers, under the leadership of Senator Tom Patterson, had secured from President Roosevelt the promise of an audience to hear their protest against the radical proposal to charge real money for grazing livestock upon the National Forests. They did not know that G.P. had casually mentioned to the President that by a strange coincidence he happened to have in Washington eight men from widely distributed parts of the West whose views on the subject of grazing fees the President might wish to hear at the same time he heard those of the stockmen, or that the President had pronounced the idea a bully one. And so, when G.P. and Potter lined them up and marched them at a brisk pace to the White House their frames of mind were those of which the Light Brigade, upon an earlier occasion, had been accused.

G.P.'s presence was an open sesame to the White House, carrying the group through the outer office and down the hall right into the cabinet room where the President broke off an animated conversation to welcome the bunch and instruct it to seat itself, after which he proceeded to disperse the anxious crowd waiting to see him, which he did with many abrupt and explosive remarks, sundry pats on the back, and a few gentle shoves toward the door. Then seating himself at the head of the Cabinet table he opened the proceedings by giving the floor to Sen. Patterson, who pictured the sorrow and indignation of all the West at the new effrontery the Forest Service proposed. Ed. Taylor, then a budding attorney at Glenwood Springs but now a fixture in Congress, added his eloquence to that of the Senator. Then turning from the stockmen, Roosevelt leveling a threatening forefinger at the first of the shivering Forest Serviceites exploded a series of three questions: What is your name? Where do you come from? What is the sentiment of the people in your section? Like a machine gun he swept the array from end to end.

Senator Patterson had alleged that the men in charge of the Forests were all young easterners who knew nothing of the West. When he reached Bullock the President said: "Seth, it seems to me I have heard you have been in the West for several years." Bullock, who hit Deadwood in '78, smilingly replied, "Yes, Mr. President, I've been out there two or three years." The testimony from the south end of the room was monotonous in its regularity: Objection-Yes. Bankruptcy-No. Unfairness-No. Uprising and rebellion-No.

Elias Ammons, later Governor of Colorado, could no longer contain himself. Jumping to his feet he exclaimed: "I protest! He has heard eight of them and only two of us." The President smiled blandly. "Why, Mr. Ammons, if you have anything to say, I'll be glad to listen to you." He didn't know Elias. The next few moments were marked by one of the impassioned speeches for which Ammons later became famous. T. W. Gray, mild and only half convinced the Service was wrong, closed for the plaintiff.

Then for fifteen minutes Roosevelt talked of his own experiences in the West; of his personal observations of the evils of unregulated grazing. Hammering the arm of his chair with his clenched fist he asserted, "Gentlemen, sheep are dee-structive" and to prove it he cited the case of the trustful Hash-knife outfit which had brought in fifteen hundred Texas dogies to stock its range, how the sheep had raided the range and how the Hash-knife had gathered only a scant five hundred head in the spring round-up. Then, almost regretfully, he brought the hearing to a close, stating that he would announce his decision in a few days. Greeting each man by his proper name, properly pronounced, he gripped their hands and passed them into the outer world with the enthusiastic assurance that he was delighted to have met them. The bunch got its picture taken on the way back to the office.

As they passed out of the White House, Senator Patterson, who was slightly ahead, turned to Ammons and said: "It's no use. He's going to rule against us." And he did. But the western contingent of the Forest Service was some time in learning that fact for, turning their revisionary functions over to more capable hands, they were on their several ways back to their respective wildernesses.

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UNIT COSTS AS INDICATORS OF WHAT?

By M. A. Benedict, Sierra

The SERVICE BULLETIN is full these days of cost analysis and threats by Operation to allot money on this basis. The poor devil of a Super. who studies these costs wonders what it's all about. He knows they should indicate the relative efficiency of his production, but he knows that, at least in some cases, they do not. In other cases they may be so obscured by contributing factors that their relative value is questionable.

Consider, if you will, the Forest force as a pool of energy to be translated into accomplished jobs. Unlike a factory, our days of work do not consist of 48 hours per week and so many weeks in a year, but the pool is as many hour units as is necessary to keep things moving. For instance, in the calendar year 1924 the Sierra force of 10 Rangers and special men, not including the unproductive Super., put in a total of 26,900 hours, or an average of 336 days of 8 hours each. Part of this overtime, of course, is chargeable to fire but not all of it by a long shot. What happens? The pay rolls go in and all regular men are charged to a suspended account.

At the end of the year the total hours are divided into the total salary and a rate per hour is fixed and the cost for each activity is completed. One of our new Rangers figured one month that he worked for 16 cents per hour and wanted to know "how come?" The point is that, while the overtime may be really chargeable to one or two activities, it is reflected in all of them. How can I compare my costs with some other Forest who perhaps got by with somewhere near a normal number of hours? Again, what does a unit cost figure mean? I have four sales that cut 25 M or less a day, all requiring a scaler. Then two sales where the scaler handles three times or more than this. Of what use or value are unit costs?

Grazing supervision is a peculiar job. It can be, and often is, skimped, because of work that simply can't give way but the work is there waiting to be done. Your figures simply say it costs 8 cents per head, when it probably ought to be, for a few years at least, 15 cents or 20 cents. Suppose operation allots me on the basis of costs, it means that overtime as reflected in the past figures becomes a permanent thing.

I realize that at the Denver Conference costs were taken mighty seriously, and I do not want to infer that the cost of doing a job is no concern of ours providing it is well done, but simply that beyond providing a basis for rather broad comparisons, they mean little.

Going back to my energy pool. For years I have made graphs of our efforts by activities and I find that fire and the mechanics of the job eat out our very vitals when it comes to accomplishment in administration. A Ranger district with its pool of energy as represented by the Ranger and his help, if he has any, shows that this energy is distributed first to fire and the mechanics of the job, and what's left over to administration, and if there isn't much left over, he works overtime to give it sufficient to keep going.

Henry Ford probably exemplifies the American ideal of efficient management, and, while I wouldn't have one of his "flivvers" as a gift, his article in "System" on Management is commended to Operation.

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A farmer wrote to his Congressman for seed from these nitrate plants he has been hearing so much about. In case you are asked for any, Research informs us they do not come from seed but are grown from electric light bulbs.

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YE EDITOR'S CORNER

We didn't know when our Chief of Lands suggested an "Old-Timers' Corner" that he considered himself eligible for a seat, but it develops that he was among our first adventurers into the wilderness of a new Government Bureau of Forestry. We are sure it would be pleasant to hear from the others.

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Poor Benedict struggles to see through a fog of figures. Will someone please pass him the binoculars? We despise to ride in a Ford, too, and don't think much of anyone who would, in cold blood, buy one.

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Wish we could tell you a true story we heard about Ed Mulligan, who has missed his Christmas so many times (D-2 section). It has to do with an upset canoe on a stormy lake, a brave though fruitless struggle to save his companion, then a hurried hike without food for many miles through the cold to the supervisor's office and back immediately to the scene of the accident to recover his pardner's body. It's nice to know that we are in a Service that has many men like Ed. Why not in lieu of Service Stripes or Citations, a Roll of Honor in which these names and a resume of the deed would be writ, and handsomely bound, and kept?

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WASHINGTON NOTES

Washington Office Views Department Exhibit: Through the courtesy of the Department Office of Exhibits members of the Washington office were given an opportunity to see exhibit material prepared by the Department for use at State, Interstate, and International Fairs.

A special display was arranged for the Extension Foresters during their conference, and it has afforded an excellent opportunity for members of the Department to see for themselves how important exhibits are in furthering agriculture and forestry.

Members of the Forest Service to the number of 123, in two groups, visited the display and were very much impressed with the effectiveness of the booths. The forestry booth on WOOD UTILIZATION attracted particular attention. This showed numerous articles made from wood pulp, such as silk neckties and sox. One Service wit remarked: "Now I know why I get splinters in my feet when I wear 'silk' sox."

Annually 5 million people throughout the country see these booths. The Forest Service material alone is viewed by more than a million people each year. The educational value of such visual instruction is considerable, and this is one of the various effective ways of preaching the gospel of forestry.

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National Forest Receipts: Receipts from National Forests for the period July 1, 1925, to December 31, 1925, were $2,434,640.78, which is $118,770.73 in excess of the amount for the corresponding period in 1924. Timber receipts show an increase of $332,654.81 and Special Use that of $34,055.37. Grazing shows a decrease of $219,161.66, which is due principally to the fact that grazing fees were waived for a part of the calendar year 1925 in Arizona and New Mexico because of drought conditions that existed in those States. Water Power also shows a decrease of $32,052.81.

Districts showing the greatest increases are as follows: D-1, $143,363.27; D-6, $92,343.24; D-5, $38,723.12; and D-7, $29,893.19.

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How the Virginia Woods Looked to the First Explorers: "This Island has many goodly woods, and full of Deer, Coneys, Hares, and Fowl, even in the midst of Summer, in incredible abundance. The woods are not such as you find in Bohemia, Moscovia, or Hyrcania, barren and fruitless, but the highest and reddest Cedars of the world, far bettering the Cedars of the Azores, of the Indies, or of Libanus; Pines, Cypresses, Sassafras, the Lentisk, or the tree that beareth the Mastic; the tree that beareth the rind of black Cinnamon, of which Master Winter brought from the Straits of Magellan; and many other of excellent smell and quality."--From Hakluyt's "Voyages," Oxford Book of English Prose.

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DISTRICT 1 - NORTHERN DISTRICT

Prouder: In the January 4 SERVICE BULLETIN D-6 registers pride in the record of the Malheur Forest, with 114 fires, but two Class C fires, and only 165 acres burned over. Less than 10 per cent of the fires were man-caused. It is an exceptional record, and one the Forest and the District can well be proud of.

Nevertheless, in matters pertaining to fire, District 1 seldom concedes any records to anyone. In this instance, consider the record of the Selway Forest in Idaho. The area protected is about 1¼ million acres.

During the 1925 season 254 fires were controlled on this area, with only 4 Class C fires in the lot, and with but 231 acres burned over. There were no man-caused fires whatever. This Forest has a grand total of but 38 miles of roads. The rest of its transportation system is entirely by trail and pack train. Precipitation at the Forest headquarters for the months of June, July, and August - in which period all but 35 of the fires occurred - was 3.09, which is about 12 per cent below normal.

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Road Building on the Kaniksu: Assistant Engineer Geo. W. Duncan, working on the Kaniksu, reports a maximum record for a day's graveling work. His high record recently made covering a three-mile haul came to 297 tons, handled by two Mack trucks, each with one man. It is thought this record is especially good and will likely stand for sometime. The work included crushing, screening, loading, hauling, and spreading. Average cost per cu. yd. on the road was $1.60. Thirteen thousand nine hundred and thirty-two cu. yds. of crushed rock have been hauled with these two trucks during the season from June 1 to October 31, or 22,987 tons at a cost of 13¢ per yd. mi. for hauling. Eight and one-half miles of road was surfaced at an average cost of $2,080.00 per mi., surfacing 1,300 cu. yds. to the mile, and 8½ miles were maintained at a cost of $300.00 per mile, surfacing 300 cu. yds. to the mile. Output was 3,500 cu. yds. per month on an average haul of 4½ miles in length (52 shifts were lost during the season on account of fighting fires).

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Root-Rot at Monument Nursery: For the last five years a root-rot has been causing considerable damage in Douglas fir seed at the Monument Nursery. As an illustration of the damage, 5,760 square feet was sowed to Douglas fir in the fall of 1923. This area would normally produce about 690,000 two-year seedlings. Root-rot started during the first year in the seed beds with the result that there were only 302,000 seedlings alive last fall, only 226,000 of which are considered fit for planting, or about half of the number of healthy germinated seedlings. The following is quoted from the last annual report of the Monument Nursery:

"This disease first makes its appearance about three months after germination. The affected seedlings take on a yellowish green color and growth ceases. It makes its attack from one to two inches below the surface, killing all root growth below this depth. If the attack is not too severe the plant will continue to live, but will make little or no growth either in root or top until the third year. At this time it forms a wide, fibrous, shallow root system which in no instance penetrates down into the root-rot area. At the end of the third year the seedlings are of a decided second grade."

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A Strenuous Vacation: The Superior Timber Survey party disbanded this year so the boys could spend Christmas at home. Here is the way they enjoyed themselves.

Ed. Mulligan, who has not been able to spend a Christmas with his family for five years, found all his children sick with croup, and helped nurse them through the holidays; Legat went to bed with an attack of lumbago and rheumatism; Bean's little girl took pneumonia, and had to be taken to the hospital at Duluth; Barker had his tonsils amputated, for the third time, and spent the rest of his time in a dentist's chair; Groesbeck spent most of his holidays on trains between Duluth and Steamboat Springs; Carney celebrated by cruising exchange lands and timber sales cut on his district; Valentine had exhausted his leave by going on a honeymoon trip, and had to work straight through. So the boys are now all back on the job, happy and contented, and getting rested up from their strenuous vacation.--A.L.R.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

The Act of June 11th will Soon be History: The settlement section of the District statistical report shows a continued decrease in homestead possibilities. For the past year only one tract of land was listed in New Mexico and eleven in Arizona as against 50 the previous year for the two States. Eight of the twelve cases were on the Coconino but even here there is a decided dropping off. The total acreage listed was 1,488 acres and over and against this there were seven recalls covering more than 700 acres.

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Jornado Range Reserve Agreement Renewed: A new agreement which provides for continuing the grazing investigations on the Jornado Range Reserve on a cooperative basis for a period of twenty years, and renewable, has recently been approved by the Secretary of Agriculture. Mr. [illegible] H. Waggoner of El Paso, Texas, an experienced stockman, who has also been associated with the Livestock Loan and Packing business, is the new cooperator. The contract provides for an extensive range improvement program and a management plan which will aid materially in carrying out future investigations and research work. All range improvements will be instituted by the cooperators, for which he will be given grazing credit at the rate of $1.50 per head for grown stock on a yearlong basis. The Reserve which has been clear of cattle for the past ten months will be stocked shortly after the first of the coming year with a herd of high grade Hereford cows.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

The Hazards of Changing Policies: On January 1, the practice of applying reductions in grazing transfers where the numbers involved are less than the protective limit was discontinued. Possibly had the District Forester known the trouble he was going to cause the permittees there would never have been the change. Sometime during December a certain permittee holding a permit on the Manti Forest for the handsome number of sheep, viz., 51 head, conspired with two malefactors of great wealth who decided to corral said 51 sheep. A protocol was drafted for the transaction and signed, permittee was to receive so much money for the sheep with the permit and after receiving payment for the same he signed the necessary transfer papers. When the sheep magnates called at the Supervisor's office on January 6 and learned that no reductions were being applied even where such large numbers were involved, it became necessary for them to declare the protocol null and void, since the two magnates and the seller had agreed in their 14 points upon a settlement as to who was to carry the terrific burden on account of the loss of the 5 woolies that should not have grazed upon the high-priced Manti herbage. When it was found that there were to be no losses in transfer, the seller, true to American intuition, immediately took advantage of the occasion and cashed in on the additional 5 head preference, while the purchasers, as magnates are wont to do, felt that the fortune accruing by the change of the policy was rightfully theirs. It is not known at this time just how this case will be compromised. We may be called upon to apply the old reduction regardless of the D.F.'s decision. Our advice to them was to shake dice or draw straws for a solution. Since they have not been back in the office for a day and a half, it is presumed that the 14 points have been scrapped and that contrary to the ways of the U. S. lawmakers, they arrived at a satisfactory conclusion.--J.W.H.

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DISTRICT 5 - CALIFORNIA DISTRICT

Midwinter Fires on Santa Barbara: The Santa Barbara is growing a bit skeptical regarding the exact date of the closed season on fires. The Casitas fire November 19 crept in late, and on January 12 - much too late according to all standards and instructions - a brush fire started by campers on Topa-Topa Mountain in the Ojai District, burning over some 75 acres. Then, just to add to the general grief, another fire broke out in San Marcos Pass on January 15, and kept the boys rustling for several days.--C.G.H.

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It was Cruel to Send Him Such Instructions: The following illuminating paragraph is taken from instructions on the use of the punch card tabulating equipment recently received from Washington by our genial Fiscal Agent, A. W. Smith. It is reported that he allowed his cigar to go out five times while trying to digest this paragraph:

"The coefficient of Multiple Correlation (R) may be defined as the coefficient of correlation (Pearsonian) between the dependent variable and corresponding estimates thereof, computed from the independent variables, i. e., if X', the estimated value of X, equals b_1A plus b_2B and b_3C ..... plus a constant, where A, B, and C, are the independent variables and b_1, b_2, b_3, are the net regression coefficients, R equals the mean product of the deviations of X and X' from their respective averages divided by the product of the standard deviations of X and X'. R is also equal to the standard deviation of X' divided by the standard deviation of X. Also, the standard deviation of X' squared is equal to the mean product of the deviations of X and X' from their respective averages."

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DISTRICT 6 - NORTH PACIFIC DISTRICT

D-6 F. A.'s Office in Big Business Class: First place in the "Forest Service Financial League" is held by the D-6 Fiscal Agent's office for the quarter ending September 30, 1925. This includes first place in total disbursements, number of vouchers paid, and checks issued. Disbursements amounted to $1,168,576.37 for the Forest Service, and $1,275,382.64 for the B.P.R., a total of $2,444,459.01. D-1 leads in straight Forest Service disbursements with a total of $1,282,012.15, but this is their total, since they have no B.P.R. accounts. During the quarter the D-6 office paid 8,003 Forest Service vouchers, and 2,592 B.P.R. vouchers, a total of 10,595, as against a total of 8,106 for D-5 and 7,348 for D-1, the two nearest rivals. In checks issued the batting averages are D-6, 23,116 checks; D-5, 20,470; D-1, 16,891. Placed end to end, these checks would make a strip of Forest Service Green from the Irresistible Force to the Immovable Obstacle (whatever and wherever they are!).

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Oldest Boundary Sign: Now that the Oregonian has settled the question of which Scotchman is carrying the oldest jack knife, let's see who has the oldest boundary sign on his district.

Along comes Mr. Huffman from the Spirit Lake District and Columbia Forest and says that in this district on Green River there is an old boundary notice bearing the name of Binger Herman. It is hard to determine when it might have been pasted but it is certain that a good many years have elapsed. The cloth notice is fairly well preserved and the printing is very legible.--K.P.C.

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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. X, No. 7. Washington, D. C. February 15, 1926.

OUR BIRTHDAY - TWENTY ONE

That was a nice and a quite significant family meeting, our last one. We have reached our majority. We are come of age, and fittingly we foregathered, 150 strong, in the auditorium of the National Museum, for to listen and for to admire, and learn of and from those who have led us through the toddling and teething and tempestuous years of our infancy to our present vital young man and womanhood.

George B. Sudworth, the nestor of the Service, took us back to a Division of Forestry, before G. P. and the present Bureau of Forestry, consisting of three people housed in the N. W. quarter section of an attic somewhere in Washington and pictured our first hesitant and uncertain steps, and G. G. Anderson's memory gave us an enlarged and dignified Forest Service housed in three rooms, one, hall-bedroom size, for G. P.; one for Overton Price, Associate Forester, with five or six administrators, each with a screen around his desk the ostensible purpose of which was to give privacy; and a third room, not too large, in which fourteen people buzzed and which our files and library also helped to fill.

C. G. Smith and John Hatton drew interesting pictures of our infant struggles, "Hattie" recalling a prophecy of permanency for the Forest Service that our twenty-one years have justified.

Mr. Kneipp, Chief of Lands, whose hair is silvering but who simply cannot be as old as the facts seem to indicate, sketched clearly on our imaginations the figure of a tree - the Service - a giant Sequoia. A seed tree surrounded by its progeny of State forestry services, forestry associations and kindred organizations. We, like that tree, a growing tree, will put on each year the wood of new accomplishment, and standing stoutly against the beatings of adverse storms be ever an emblem of service.

Mr. Herbert Smith drew for us the picture of G. P. at 40, assuming charge of the new Service organization and of the men associated with him, with Overton Price, Associate Forester, and Benedict, Allen, Hall, Sterling, Kellogg, Zon, Hosmer the wheel horses, followed by the colts among whom were

Greeley, Redington, Peters, Cooper, Reed and Chapman. Everybody was then young and everything was new. These men, and others, were likened to the Grecian torch-bearers who ran with their lighted torch until being themselves spent they passed their light on for other hands to carry. "We have come of age," was his message, "but we do not grow old."

Our erstwhile Chief and sincere friend and collaborator Col. Graves told us of those days when problems were met by a splendid and dashing vigor that overrode all obstacles and carried on with what must have been inspiration, for the trail was certainly not blazed. A sincere and complete honesty and loyalty to an ideal have built for the Service in the public mind a place from which it can not be dislodged. As the Chief of our band of twenty five hundred, he congratulated Col. Greeley, and because we are led by Col. Greeley he congratulated the twenty five hundred.

"The day of the transfer of the forest reserves to the Department of Agriculture was the day of our 'Man on Horseback.' Like the age of Pericles in the history of Greece, 1905 to 1910 will always stand out in Forest Service history as that period when most of the National Forests took substantially their present form. In 1905, 62 million acres; in 1909, 194 million acres, a gain of 132 million acres in five years. The very size of the task physically would have halted other than a real leader of super-men." Thus Mr. Sherman. Here is one of his vivid word pictures: "The riches of those millions of acres of forest land were claimed by Pinchot in the name of all the people of the United States."

Mr. Sherman gave us "for auld lang syne" some pictures: G. P. on horseback during the inaugural parade of President Coolidge, Overton Price, Col. Graves, Albert Potter, and Gene Bruce, with fragrant words about each.

"We turn our eyes to the future with all its possibilities - To build wisely on a base so nobly laid. To hold for all the people the resources won in the pioneer period. To guard our 'woods and templed hills'."

And Col. Greeley gave us this to think of - "In family parlance, 21 years marks not only the age of discretion but manhood's estate with the right and responsibility to inherit and carry on. The thought which I would like to emphasize to-day is the great inheritance which has been entrusted to the Forest Service. It is measurable only very partially by our millions of acres of National Forests or by the job which we have grown into as defined by laws and appropriations. Our greatest inheritance is the spirit of public service, and it is our greatest responsibility to carry on and conserve that conception of public work in the public welfare which has been entrusted to us.

"I recall how vigorously this was expressed by President Roosevelt during the evening which he spent with the little group then comprising the Society of American Foresters, in Mr. Pinchot's home. And we all know how thoroughly this conception of the opportunity before the Forest Service was instilled into us by Mr. Pinchot. We have grown in numbers since those days;

our jobs have expanded; our responsibilites have increased; more gray hairs are appearing among us; the enthusiasms of youth are maturing into the more sober convictions of middle age. But the greatest heritage we have is still the zest for public service. And of that heritage we must prove ourselves good stewards."

Listening in at such times we get a fuller realization of what our own particular job means and a measure of its true values, and we see that these are not altogether material, not the earning of a pay check, but that they have too their spiritual side in the opportunity given each of us to grow and develop as we can in a worthwhile enterprise and the opportunity to serve as we may.

Perhaps you who were not there can in some quiet hour project your ethereal selves into this our birthday party and profit by it as we did.--Ed.

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HAIL AND FAREWELL

Mr. Stuart B. Show has been appointed District Forester in the California National Forest District as successor to Mr. Redington, transferred to Washington as Assistant Forester in charge of the Branch of Public Relations.

Mr. Show has been employed in the California District continuously since 1910. He entered with the technical grade of Forest Assistant (now Junior Forester) following technical training at the Yale Forest School. His first five years were spent on the Shasta National Forest in administrative work, fire control, administration of timber sales, planting, etc. Since that time his assignments have been mainly to forest research, but he has been called upon for many varying duties bearing upon the administrative and protective work of the District.

In his extended experience, on both the administrative and research sides in the handling of National Forest timber areas, he has had much to do with studying and developing industrial forestry practice in the State. He also has taken an active part in the study of "forest fire business" and the translation of its results into better protection methods. Mr. Show has had unusual success in carrying over into administrative practice the ideas gained in his research work.

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"NEVER COULD MAKE A WORK PLAN WORK"

By F. W. Simons, Deerlodge

I have read the article in the January 11th issue of the Service Bulletin by E. L. Perry on work plans and have come to the conclusion that he is using practically the same kind of plan that I am using.

While I have put in considerable time trying to make out work plan cards I have never got them working to the point where I was satisfied that they were saving me time or that they furnished me with the information as quickly as possible. I see no reason why each man should not have a plan of his own providing it works. It seems to me that the purpose of the plan is not to set it up on a desk to look pretty, or suit the other fellow, but to make up a plan that will suit the district in which one is working. I belie my plan will work on any district with slight alterations to meet varying conditions. At any rate a standard form of work plan should not be adopted until everyone has taken a whack at it.

When I make a timber sale it is listed in my notebook, together with the number of the scale book in which the cut will be recorded, a separate sheet being used for each sale. When the sale is visited I make notes on the condition of brush disposal and on any remarks made by the purchaser having a bearing on the sale.

I also prepare sheets listing all the sales in one vicinity, and by a series of different check marks show when I visit and inspect a sale and when I close a sale. These sheets are for the purpose of seeing at a glance what sales need immediate attention. Similar sheets are made for the other parts of my district. It can be readily seen that the work plan is abandoned except that part of it pertaining to the route I am on.

I also have special use sheets and check them in the same manner. I keep copies of Form 399, properly designated, and notes of any work, other than the examination, that is to be done. I have sheets covering Grazing, which are almost a duplicate of the action sheets, and which are handy in case of discussions in the field. I keep corner record notes on corners found; rough plats of lands, and other data which perhaps are not essential, but I like to be ready for anything that turns up. I also keep what I call a "catch all" sheet for each route, noting on it the various inquiries made by the permittees which must be looked up in the field. If after investigation the inquiry proves to be valueless, it is considered "dead", checked as such, and does not clutter up the general scheme.

The monthly report to the Supervisor is on the order of the card plan, requiring considerqble changing, but it gives him a better chance to fit in his scheme with the Ranger's.

What I like about my plan is that everything is right under your thumb when you want it. It carries on the work automatically and believe me it does work. However, I realize there are other schemes, so let's have them and we will look them over.

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HEAR YE !!!

The American Forest Weekers here announced April 18-25 as the inclusive dates. The manager now advises the editor that since this makes the Week too long they are changing dates to April 18-24. Be governed accordingly.

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YE EDITOR'S CORNER

Brother Simons takes up the gauntlet of work plans chucked at us by Perry (January 11 number). He likes his plan because everything is under his thumb when he wants it. We have at our home what we call a "place for everything," but sometimes it's hard to find a particular thing in it. Could a work plan become like that?

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Chris Rachford sent us the copy for the grazing letter, "He agrees---." Chris seemed to be tremendously tickled to find one permittee who agrees with our policies.

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Shades of Linnaeus! We now have a fungus that prunes yellow pine (D-3 section). A project in Research for the development of pruning fungi on other species is indicated. Why should we not grow clear timber and demand higher stumpage prices?

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WASHINGTON NOTES

Grazing Studies Transferred to Research: The Forester has approved the transfer of the Grazing Studies work to the Branch of Research, effective March 1. This includes the Grazing Studies work under Mr. Chapline, the plant collection in the Washington office, and the three Range Experiment Stations, the Jornada, Santa Rita, and Great Basin. All technical grazing men in the Districts under pay from the Washington office will also be transferred to Research.

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Radio Service Established for the Department: The office of Chief of Radio Service of the Department has been established with S. A. Pickard in charge, and arrangements have been made for a broadcasting service. Department material will be broadcast from some 20 stations over the country, under definite arrangements. The first thing to be started, effective the middle of February, will be called "50 flashes." The set speech is rather wearing out, and Mr. Pickard's experience indicates much larger possibilities through the question and answer method. For five or six days each week, fifty flashes - questions and answers - will be put out. If you have any questions and answers to put across, send them in to PR.

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He Agrees - In Part: The Forest Service is not without a few who agree with our grazing policy, as is attested by a letter just received from a sheepman who is leasing some land within the Ochoco as a base for G-4 permit. His letter in part follows:

"I am not in a position to take issue on the point whether the lessor of lands situated in any National Forest is entitled to receive acre for acre, as I must have range at any price, but you will readily understand my problem when you compare the grazing fee of the permittees and mine; 12½ cents per head for the former and 75 cents in my own case.

"The whole thing boils down to the fact that the Government is subsidizing my neighbor and penalizing myself. This situation becomes more acute when one considers that my plant is equal to any of the permittees and superior to many, and would not be able to compete but for that very fact. During the perusal of Col. Greeley's recent article in the SATURDAY EVENING POST I realized that the Forest Service is keenly aware of this situation, and that it is anxious to give the stockman who is in the business for better or for worse an equal opportunity."--C.R.

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DISTRICT 1 - NORTHERN DISTRICT

Grazing Reconnaissance: A review of the 1925 season's grazing reconnaissance work in the District shows that a total of 406,000 acres were covered in five Forests. All of this work was intensive reconnaissance and comprised, besides the regular five-man crew on the Custer, a two-man crew on the Madison and special jobs on the Lewis & Clark, Jefferson, Madison, and Missoula Forests.

The Custer party covered 225,000 acres, all of which was productive range except about four sections, besides spending forty-four man day's work in traversing fences, the exact location of which was essential to the eventual grazing plan.

The Madison party covered 128,000 acres, and also covered the Cliff Lake Bench, which is virgin range and is to be opened up by developing water by means of a well and a distribution system. This area comprised 5,200 acres.

A special job on the Lewis and Clark covered 35,000 acres and provided the basis for settlement of a difference of opinion over the question of whether that particular range was of more value for sheep than for cattle, besides providing a basis for a grazing plan.

The 12,800 acres covered on the Jefferson and Missoula wre made to settle differences between stockmen and the Forest Service relative to carrying capacity and management. All the projects were done by men fully trained in reconnaissance work and comply with the highest standards set for such work.

Approximate cost per acre for the Custer job was $.01 and of the two-man party on the Madison was $.008.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Experiment with Season Long Planting in the Michigan Forest: Supervisor Schreck of the Michigan Forest started a very interesting experiment last spring to determine the length of time during the growing season that planting could be successfully done. Plots were planted every month throughout the growing season from April to November, inclusive, using 2-year old seedlings. The survival at the end of the season for all except the last two months is as follows: April, 97%; May, 96%; June, 75%; July, 52%; August, 63%; September, 94%.

It is too early to draw conclusions, as further losses will occur and it is essential in a test of this kind to repeat it several times. The result, however, offers some encouragement toward extending the planting season considerably later in the spring and opening it much earlier in the fall than has been the case in the past. This will be a considerable help where a large planting program, such as is planned for the Michigan Forest in a few years, is undertaken. We are now planting from 3,000 to 4,000 acres annually and hope to increase this to 6,000 acres or better as soon as the planting of denuded land is given greater recognition by Congress in increased appropriations.

* * *

The Annual National Western Livestock Show at Denver has again come and gone and with it the usual visits to the District office of present and prospective grazing permittees. If anyone has doubted the statements made in newspapers and periodicals, far and wide, that the cattle business is on the upgrade, their doubts would have been dispelled had they seen the faces and heard the talk of the cattle men in contrast to a year ago. Market prices for cattle, during the show, as well as before the show, have been materially higher than at any time in the past four or five years. One might make the conjecture that a change may be expected, to some extent at least, in the general attitude on the so-called National Forest grazing controversy, especially if that attitude, as some believe, was in part the result of pessimism incident to the condition of the industry.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

Department will Study Western Ranches: Inspector of Grazing D. [illegible] Shoemaker and Director J. D. Schoeller of the Jornado Range Reserve recently met with representatives of the Bureau of Agricultural Economics, Bureau of Animal Industry, and the State Agricultural Colleges of Texas, New Mexico, Arizona, and Nevada in preliminary conference at Las Cruces for consideration of a ranch organization reconnaissance survey which it is planned to conduct for Western Texas, New Mexico, Arizona, Southern Nevada and Southern Utah. The ranch studies are to be started immediately and the field work will be completed probably by early summer. Some 300 representative ranches will be visited and complete data compiled regarding organization, business methods, and costs of production. The Forest Service likely will not take an active part in the field work because most of the ranches to be studied are outside of the Forests, but grazing data including the results of the range appraisal will be made available to the commission and will save duplication of a lot of work and expense. It is believed the ranch studies will be very valuable to the livestock industry of the Southwest.

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Nature Prunes the Conifers: The pruning fungus (*cenangium abietis*) of western yellow pine is a valuable asset to lumbering says Dr. W. H. Long, Forest Pathologist. This fungus attacks the lower branches of pine where the moisture is greatest and gradually works up the young tree year after year until a distance of 20 to 30 feet is reached. It rarely goes higher than this, due apparently to lack of moisture. The fungus attacks branches which are weakened by drought, shade, etc., the fruiting bodies appear as small black pustules breaking through the bark on branches which have been dead for several months. These pustules ripen and discharge their spores during the rainy season. A branch attacked by this fungus will have pale yellowish leaves, a dead twig here and there, and a general unhealthy appearance.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Farm Bureau Meeting: Director C. L. Forsling of the Great Basin Experiment Station attended the Utah Farm Bureau meeting recently held at Salt Lake and reports that a resolution was passed which is nearly the same as the one adopted by the farm bureau and extension workers before the Senate Committee meeting in Salt Lake last August. Fees, however, are not mentioned as they were in the earlier resolution. The resolution recites the conditions on the public domain and points out that Federal aid is necessary in controlling the situation, although the stockmen using the range should have a voice in shaping the policy and the distribution privileges. The situation is not simple, however, and demands study before any final policy is put into effect. Small stock owners must be taken care of. The resolution passed yesterday also states that the grazing on the public domain should be administered by the Forest Service - a point not included in the resolution of last August.

* * *

Roads Save Money: A study of the cost of hauling freight recently made by the Payette Forest shows that in 1917-18 it cost $3.00 per ton mile to haul by wagon between Cascade and Knox, a distance of 28 miles. In 1919, after some work had been done on the road so that it was passable to trucks, the rate fell to $1.00 per ton mile. Since then the road has been further improved and costs have continued to drop so that now the cost is 35¢ per ton mile between Cascade and Knox. Chopping 90 per cent off the cost of hauling is a pretty good indication of what the development of roads can do. It is interesting to note the effect of heavy grades on the hauling rate. Between Cascade and Knox is a fairly high divide, a long grade up one side and a shorter one down the other. A rate of 35¢ per ton mile is charged here. Between Knox and Landmark Ranger Station is quite a high summit with considerable 10 per cent grade, so that from Cascade to Landmark the rate is 38¢ per ton mile. From Landmark to Yellow Pine is 26 miles of road following a water grade down Johnson Creek, making such easy going that the rate from Cascade to Yellow Pine is 30¢ per ton mile.

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DISTRICT 5 - CALIFORNIA DISTRICT

Attends Park Rangers' Conference: I sat in a portion of one day at the conference of Chief Rangers of all the National Parks in the United States. The conference was held at Alder Creek, the headquarters of the Sequoia National Park. This was the first conference the Park Service has ever held where a ranger from each part attended. I claim the distinction of being the first and only Forest Supervisor who ever attended such a meeting.

I was surprised at the similarity of the problems discussed to those considered in our ranger meetings. The chairman held discussions strictly to the subject and the questions to a vote promptly. There appeared to be a strong belief that the Forest Service was treated better by Congress in appropriations, both for improvements and salaries, than the Park Service. I explained that we held the opposite view. Insignia on the uniform received a few minutes of intense argument, and a majority favored the present Forest Service idea - one badge for everybody regardless of rank.

There appeared to be great respect for Forest officers wherever the field men come in contact, and a desire to cooperate.

Each man present stated that the meeting was decidedly beneficial to him, and a resolution was passed unanimously requesting the Park Director to arrange such meetings each year, the next one to be held in Yellowstone Park, preferably during October.--F.P.C.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Mohammed and the Mountain: Last summer while assisting in fire suppression on the Wenatchee, a fire fighter put over what seemed to be a very ingenious trick on one of the smaller but very treacherous fires. This has probably been worked by others and would appear to be obvious enough to anybody, but in this case one of the crew thought of it.

This fire was trenched before it had attained more than 4 acres in size. I had carried water from a small stream not far away for several hours the previous night. The humus was deep and dry, and burned very readily.

On the following day one of the patrolmen figured that the stream could be brought to the fire, and with the help of another they ditched it in such a manner that the water ran down the entire length of the fire trench on one side of the fire, relieving a great deal of the tension which follows for several days after an August fire has been put under so-called "control."--F.W.C.

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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. X, No. 8. Washington, D. C. February 22, 1926.

"GRAZING" AT THE DENVER CONFERENCE

By John H. Hatton, D-2

Grazing subjects at the Denver District Foresters' conference permeated the various discussions, but centered mostly in the recent agitation by the livestock interests of the West.

There appeared to be two schools of thought. On the one hand were the conservatives - and they were in the undoubted majority; and on the other hand were some who felt that grazing uses and accepted practices had grown pretty much to manhood and could perhaps get along without so much leading and guiding, and with more liberal considerations.

The first group, in other words, with very worthy zeal as designated guardians of public properties, were not inclined to give much quarter on the publicly announced demands of the national livestock organizations. In fact, putting it mildly, they were rather inclined to slap the livestock interests on the wrists.

The smaller group seemed to think that while many of the demands by national and State leaders were unreasonable and impossible conservation in this country has come to be more a matter of public conscience than we at first think, and that a pretty large majority of our grazing permittees on the National Forests could be credited with having acquired a measurable amount of that conscience. If this were true they could be counted on not as menaces but rather as leaders in matters of conservation in its local expressions and practices. At least they are not or would not be unwilling followers.

The expressed demands of the national leaders in western livestock circles have been fraught with such menace to the future of conservation in this country in all that the word conservation implies that it is well that more conservative thought is in the ascendancy at this time. Even this school, however, recognizes that we must get closer to the stockmen's practical business problems. In recognition of this principle, National Forest grazing regulations have been made to conform more closely to such methods in livestock management as have come to be determined by purely business considerations. The Forest Service is essentially a business organization, however, and would have come to these considerations sooner or later anyway. The recent agitation has simply served to bring them to the fore a little sooner. Also it should not be wholly lacking in certain wholesome influences upon us as forest administrators. We have confidence to believe that the rank and file of the stockmen of the West are not outside the conservation fold, and that the years have not been spent in vain. The Savior of mankind was himself tempted when on the mountain and the kingdoms of the world were held up before him.

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ENTRY SURVEY NOTES

By M. S. Wright, Washington

Now that the final curtain is about to be rung down on our entry survey activities, it appears appropriate to glance back on this herculean task and see what we have accomplished and the costs thereof.

Since the first entry survey for patent was made in 1913, the Forest Service has surveyed 4,451 claims, totaling 454,917 acres, at a cost of $615,157.34. This acreage equals approximately 711 square miles, or the amount of land within a square whose sides measure 26½ miles.

The average cost for the survey of each claim was $138.00, or an average of $1.35 per acre.

The distribution of cost, number of claims in each district, etc., are shown on the following tabulation:

Dist.	Total cost	Number of claims	Cost per claim	Number of acres	Cost per acre	Average size per claim	Abandoned surveys	Cost
1	$ 168,841.00	1179	$143	142,108.90	$1.19	121	5	$ 795.48
2	114,029,77	794	144	84,919.38	1.34	107	17	1,615.49
3	126,266.73	899	140	76,978.13	1.64	86	30	4,488.00
4	95,977.33	887	108	92,880.28	1.03	105	29	2,491.49
5	25,131.07	214	117	17,077.03	1.47	80	42	3,817.14
6	62,856.29	362	174	30,800.22	2.04	85	18	3,059.51
7		- none -						
8	22,055.15	116	190	10,153.28	2.17	88	--	--
Total	615,157.34	4451	138	454,917.22	1.35	102	141	16,267.11

It is apparent from a perusal of these data that the Forest Service has taken pretty good care of its settlers, and has spent considerable money in aiding them to secure title to their lands, much more, in fact, than will be returned in taxes for a good number of years to come.

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WHAT IS REFORESTATION?

By Thornton T. Munger, Pacific Northwest For. Exp. Sta.

Ask the first twenty men you meet on the street - "What is reforestation?" and nineteen of them will say, "Planting little trees to make a new forest," or "Sowing tree seeds where fire or logging caused devastation." Their only conception of forest perpetuation is hand planting or seeding. They think of the forester as one who does two things,- prevents forest fires and replants barren hillsides. The possibilities of forest perpetuation by the skillful use of the ax, of natural reforestation after logging through the agency of seed trees or selective cutting, are unheard of.

I suggest to a lumberman the advantages in continuous forest production, but before I can finish my appeal he dismisses all thought of trying to grow a new crop by proclaiming "Forestry is too expensive. I cannot afford ten dollars an acre for planting." And this in a region where natural reforestation is superlative, and I didn't want him to think of planting. Probably not one acre in a hundred the country over that is now being logged will be reforested artificially. Yet the public thinks planting is the only kind of reforestation there is.

This erroneous conception of forestry is an actual hindrance to its progress, for those who shy at the expense of planting might be willing to adopt the cheaper methods of natural regeneration if they realized that these would give results.

Looking back it is not surprising that the public has got this exaggerated idea of the place planting has in forestry. Early forestry propaganda capitalized the fascination that attaches to tree planting. On the prairies where planting is the only recourse people take more interest in forestation than do the men of the timbered States. Planting is more easily commercialized than other phases of silviculture. Arbor day with its tree-planting exercises is thought to be the embodiment of the forester's life; the planting spade rather than the ax to be his symbol.

The layman's ear can be easily caught by the lure of planting, especially planting foreign trees, but beware playing up this side of forestry too strong and giving the public a warped idea of what American forestry should be. There is sure to be a reaction from any unsound propaganda.

Let us teach the public how to reforest with an ax, let them know what the selection system is, how clear cutting in strips or with single seed trees is one good measure of reforestation; and incidentally let us teach them how to spell the word without the extra "r".

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ONE TREE = 220,000 BD. FT.

Harry D. Tiemann of the Forest Products Laboratory sets us right as to length and breadth of trees. Referring to the statement in the SERVICE BULLETIN of November 16 that "The tallest tree that grows in the world is the Eucalyptus amygdalina of Australia," he tells us:

"While in Australia in 1921 and 1922, I took particular pains to ascertain the facts regarding the tallest trees. At the Melbourne Exposition in 1888 a prize was given for correct information as to the tallest living tree in Australia. The best was an account of a Eucalyptus regnans near Mt. Bau Bau 326 feet. Subsequently one was found at Gippsland, Victoria, said to have been 375 feet high, both of which, however, have been destroyed. It seems probable that taller trees once existed but there are no unquestionable records, and unfortunately these giants have long since gone into smoke or been split into palings. I measured a standing tree over 300 feet high and saw a fallen one 17 feet in diameter six feet above the roots, which had probably fallen a century ago. The largest existing Australian trees today range from 300 to 320 feet in height and from six to eight feet in diameter above the root swellings. They are magnificently straight and clear, the first large branches often being 100 to 200 feet above the ground. Eucalyptus (amygdalina) regnans the "Mountain Ash" of Victoria is the largest, though it is closely followed by the Karri (E. diversicolor) of Western Australia.

Thus the supremacy in height of living trees of the world goes to Sequoia! But not so as to volume. Many foresters are unaware that the greatest lumber volume is possessed by a New Zealand tree belonging to the Pine Family, the Kauri (Dammara australis). One living tree is said to contain 195,000 board feet and another, now destroyed, contained 220,000 board feet. These Kauri, however, are not as tall as the Sequoia."

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DOES YOUNG GROWTH HAVE A VALUE?

For the past three years we have been endeavoring to secure financial cooperation in fire protection from owners of private timberland within the Harney Forest. The greater part of these lands are cut over, therefore to get these owners interested we had to emphasize the value of the young growth and the necessity of protecting it from fire. This argument sounded very logical and enabled us to establish a very good record in securing financial cooperation, but now that we are trying to make a decent showing in land exchange work and argue that we cannot place any value on young growth, some of our prospects who have paid financial cooperation just get a blank look on their faces and say ---------- leaving their thoughts unexpressed.--J.F.C.

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YE EDITOR'S CORNER

Looks like an opportunity for some good PR man to reply to Munger's article.

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Weidman of the Northern Rocky Mountain Experiment Station gently digs the man in the office, or so it seems to ye poor editor, and we wonder if the two men in the office can't tell us something about the chap in the bush. The SERVICE BULLETIN is a fine place to air your views and the editorial staff are very broadminded.

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You all should have come to our party. We note that Cuno calls it our Annual Reception.

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"Half a Hundred News Stories" reads as though the chaps in D-3 were pulling together in a splendid way, don't you think? PR men please note.

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We would like to print tales of any other father and son tradition if you will send them in. No higher compliment could be paid the Service as a vital organization than is instanced in Guthrie's D-6 note.

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WASHINGTON NOTES

Our Party: A goodly time was had by all at the Annual Reception and Dance held in the Washington Club on the evening of February 11. As guests of honor we had the Assistant Secretary of Agriculture and Mrs. Dunlap, the Honorable Scott Leavitt and Mrs. Leavitt, Mr. and Mrs. John T. Caine, III, and Dan Casement. Far-off Alaska was represented in the person of B. F. Heintzleman. Numerous former Forest Service folks and friends of the Service enjoyed the evening chinning, playing cards, and dancing.

There were no casualties in the Paul Jones' in spite of the slippery footing. Wives and sweethearts did find difficulty, it must be confessed, in breaking up the frequent gatherings around the liquid bowl, which the entertainment committee wishes to assure its friends in the field was absolutely lacking in "punch."

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The Relative Humidity Tables as issued in the field notebook form fail to cover the entire spread of relative humidity at any one elevation. The printed tables indicate the relative humidity at the lower limits but fail to show the values at the upper limits which are important from many fire-fighting standpoints. A complete set of relative humidity tables for all temperatures and pressures is published in Bulletin 235 of the Weather Bureau entitled "Psychrometric Tables." The Western Forestry and Conservation Association has also issued relative humidity tables in a rather compact form to sell at 10 cents a set.

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FOREST EXPERIMENT STATIONS

Office versus Bush: An example of why a man in the bush may sometimes be worth two in the office is afforded by a contrast of observation and tallies on a certain strip cutting examined this year on the Coeur d'Alene. This strip, approximately 200 feet wide by 500 feet long, lies up and down a slope on two sides of a creek, about half on one side and half on the other. All the timber was cut 16 years ago, the stand on the north slope consisting mostly of white pine with a comparatively small mixture of hemlock and other species, and that on the south slope consisting of white pine, Douglas fir, and western larch in approximately equal amounts. Seeding is, of course, going on from both sides and ends of the strip. Here is the seedling count per acre at present:

	North slope	South slope
White pine	8,200	370
White fir	9,000	620
Douglas fir	200	500
Cedar	1,000	
Hemlock	122,600	
Totals	141,000	1,490

According to the figures, nearly 1,500 to the acre appears a thoroughly adequate stocking for the south slope, with a fair proportion of valuable species. The north slope, on the other hand, presents a hopeless picture, with its appalling predominance of hemlock.

To the man on the ground, however, the situation shows up very differently. On the south slope only two-thirds of the area bears any reproduction, and a very scant cover at that. A dense cover of brush, mostly Ceanothus and willow, predominates. Seedlings vary from 5 to 14 years, and the greatest height is about 2 feet. On the north slope seedlings ranging from 1 to 15 years reach 5 and 6 feet in height. It is evident that there is more hemlock than is desirable, but the white pine seems to be adequate in amount and spacing to make a very good young crop of white pine timber, considering its ability to outstrip the hemlock in height growth. To the man on the ground, reproduction on the north slope would certainly be pronounced satisfactory, and that on the south slope absolutely unsatisfactory.--R.H.W., Northern Rocky Mountain.

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DISTRICT 1 - NORTHERN DISTRICT

The "Thundering Herd" - No More: The day of the "big herd" is gone and the last survivors left the plains long ago, but nevertheless the Madison Forest can boast of having several head of buffalo on the open range.

Last spring, while riding in the upper Centennial Valley, Ranger Joy and I came upon an old cow, a two-year-old bull, and a very small calf. Our horses became panicky and we could not approach very closely, but managed to get a good picture from a distance of about seventy yards. Later on in the summer the bull gave Joy a very lively run before Joy's horse managed to secure a margin of safety.

Another buffalo was reported to be at Wade Lake, and an old bull was seen from time to time along the upper Ruby River.

The buffalo would be a great asset to our list of game animals were it not for their fence-breaking proclivities. The buffaloes wander down into the valleys in winter and no ranch fence or hay corral seems to be strong enough to hold them to the open range.

Several buffaloes have been shot from time to time when attacking settlers or destroying fences and property. Some half dozen of the animals were rounded up, held and fed in the corrals of the Buck ranch and other ranches in the upper Centennial, and a short time ago one young rancher was gored to death by an infuriated bull near Henry's Lake.

The Madison has a wealth of game, and in one day, while riding in Antelope Basin, I was fortunate enough to see four deer, two elk, a cinnamon bear, a coyote, and three moose. Seeing three wild buffaloes a day or two later capped the climax.--H.E.S.

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Better Look Your District Over Carefully, Boys: Items relating to big trees have appeared from time to time in these pages, but it remains for the Daily Missoulian to call attention to two of the biggest yellow pines ever cut in this part of the country. The first was cut by the Polleys Lumber Company, near Evaro, Montana, early in December. It measured 63 inches on the stump, was 150 feet high, and scaled 10,700 feet. A count of its rings showed it to be 1,100 years old, and the Missoulian printed a nice little story, making references to King John, Magna Charta, Leif Ericson, Columbus, the Revolutionary War, and other well-known characters who lived or operated during the life of this tree.

The next week, this record was eclipsed by a tree felled near Plains, Montana. This monster was 67 inches on the stump, 158 feet high, and scaled 13,310 feet gross, and 11,010 feet after deductions for breakage had been made. Age not given, but assumed to be over 21 years.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Smokers, Beware!! In accordance with the provisions of Regulation T-1, under which the District Forester has authority to prohibit smoking during periods of fire danger on National Forests, an order was issued by the District Forester on January 12, 1924, prohibiting smoking within the exterior boundaries of the Nebraska Forest during the period March 1 to November 30, except at places of human habitation. This was issued because of the large area of plantations within the Forest which must be protected, and because of the ease with which prairie fires are started by smokers throwing butts from their cars.

On October 5, 1924, the first trespasser under this regulation was arrested by Supervisor Higgins. He was taken to the nearest United States Commissioner at Chadron and bound over for appearance at the next term of the Federal Court. He was tried on September 14, 1925, entered a plea of guilty and was fined one dollar by Judge Woodrough. The costs were remitted. The judge reprimanded the man and stated that he was the first offender to be arrested and that smoking on the Nebraska National Forest was against the law and had to be stopped. He further stated that the next offender who came before him for violation of this regulation would not get off so lightly. The penalty was light, but this case will have a very beneficial effect on the entire community, as the people know now that this law can and will be enforced.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

Land Exchange Examinations Cost 2½¢ Per Acre Last Year: During the 1925 season the District Land Exchange party under the leadership of Mr. R. P. Boone made examinations of lands offered to the Government on exchange propositions totaling 116,824 acres. The examinations embraced an estimate of timber stand and a valuation survey, with map, which shows watershed, grazing, recreation, and other values of the tracts together with the reforestation possibilities of the cut-over areas. The cost, including transportation, subsistence, and salaries averaged $.0252 per acre for the season's work.

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Half a Hundred News Stories Issued by District Office During 1925: A review of the news stories written and distributed by the District Office to southwestern newspapers shows that a total of 53 were issued during the past year. More than during any previous year, earnest thought was given to the preparation of the news articles and every office contributed ideas, and in some instances the completed stories. The stories were written with the purpose of specific accomplishment. They were confined to information and explanation of single outstanding principles and prepared with the view of being definitely educational to the readers of the public press. Timeliness and news value were carefully considered in order that editors who cooperated in putting the information before their readers could regard the items as being worth the space they occupied. Of the 53 newspaper stories put out, 21 were for the benefit of Operation, chiefly fire prevention, 13 for Forest Management, telling how Government timber is managed and marketed under forestry methods. Eight stories discussed National Forest Grazing in principle and practice, six dealt with Land problems, while the rest treated of Engineering, Accounts and Exhibit matters. Clippings received indicate wide use of the stories and prominent editors have voiced their satisfaction regarding style, news value, and effectiveness.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Exhibits That Cost Little and Help a Lot: The school teachers of Idaho met at Boise last week, and, among others, the Forest Service was invited to put on an educational exhibit. F. S. Baker went up from the District Office to help Stokes. There was not time to make anything very elaborate but, the Boise Christmas tree market being oversupplied, there was fortunately a lot of Christmas trees to be had for the asking. In the hallway of the High School two forest scenes were built up of these Christmas trees, one of them showing where the careless camper had been - a camp ground with a fire which had escaped, littered up with tin cans, old bottles and torn down fire notices. A neat camp ground was made in among the other trees and, as the exhibit was located in a rather dark corner of the hall, an imitation fire was made of colored silk streamers fastened to the wire of an electric fan and illumined by a light below. This proved to be quite effective.

Such a thing as a forest fire seemed pretty far from being a possibility, as Stokes and Baker worked out in a vacant lot trying to burn needles off of some of the trees to make a horrible looking sight. It was astonishing how hard they burned. We suppose an expert would immediately say "Humidity."

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DISTRICT 5 - CALIFORNIA DISTRICT

Standard Lumber Company Buys More Timber: On January 20 the following timber sale award in the Stanislaus Forest was made to the Standard Lumber Company: 10,000 M Sugar pine at $5.50 per M; 14,500 M Yellow pine, $4.00 per M, 2,900 M Incense cedar, $.50 per M; 7,200 M White and Red fir, $.50 per M; a total of 34,600 M ft. B. M. all species.--T.D.W.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Wins Prize: Jno. D. Guthrie was notified late in December that he had won the $500 prize offered by the Society of American Foresters (Charles Lathrop Pack Prize) for ~~the~~ "the paper which presents concisely and in such a way as to be understood by the average intelligent lay reader, the best contribution to the advancement of forestry." The contest closed on Nov. 1, 192 and there were 14 contestants. Mr. Guthrie's paper, of some 3500 words, dealt with "The Public Relations of Forestry." It will appear in the February issue of the Journal of Forestry, and it is understood that Mr. Pack has ordered a large number of reprints of the paper for general distribution. There is to be another contest for 1926.

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FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. X, No. 9. Washington, D. C. March 1, 1926.

OUR FOREST TAXATION STUDY IS UNDER WAY

Professor Fred R. Fairchild, Chairman Department of Economics at Yale, has accepted a commission to lead our tax study work.

The purpose of cooperative investigations of forest taxation under the Clarke-McNary law is to study the effect of tax laws, methods, and practices upon forest perpetuation and to devise tax laws that are designed to encourage the conservation and growing of timber. The Forest Service will use the authority and direction given the Secretary of Agriculture in Section 3 to cooperate with the States or other suitable agencies.

If the necessary appropriation becomes available, investigations will be started in three of the important forest regions. Very little detailed authoritative information on the existing forest tax situation, or of its influence on reforestation, is available as a basis for intensive study. The plan which follows is based on a belief that forest taxation cannot be adequately considered or wisely modified without reference to the general State and local tax and revenue situation.

Data to be Collected

The first important class of information secured will be to show in detail the existing forest land and timber tax situation, and in more general terms the tax situation on other kinds of property. Detailed information will therefore be secured on the constitutional, legislative, and traditional bases for taxation, and on their practical application in the levying of assessments and collection of taxes on forest land and other classes of property.

On forest land taxation more specific data will be collected on the character of the forest, i. e., whether mature, second growth or cull, etc., and the acreage of each class; on actual and assessed values; on tax rates under the property tax, etc. Similar information will be secured on any other forms of taxes levied on forest land or the income derived from it, such as the income tax. In order that the effect of modifications upon the revenues of different political units such as States, counties, etc., may be more fully understood, data will be secured on the proportion of forest taxes of all kinds finally paid to each.

The second important class of data which will be collected is that which will tend to show the effect of the existing tax situation on reforestation and timber growing. This will include information for a series of years on: (a) the land policy of timberland owners as to the holding or sale of forest lands; (b) purchase and blocking up of land units; (c) the relinquishment of lands for delinquent taxes and their purchase in tax sales; (d) the policy of owners as to cutting mature timber on a sustained yield plan; reforestation through suitable methods of cutting, fire and insect protection, artificial planting, etc.

The third important class of data will include various other information necessary to work out modified systems of taxation and to check them on specific sets of data representing actual conditions. It will include, for the States studied, constitutional, legislative, administrative, and traditional restrictions and handicaps which have a very large practical value in determining both the form and extent of feasible modifications in existing law and practice. It will include information supplementing that already available on current stumpage and forest land values and trends in different sections of the country and for various species and products, as a basis for the determination of present and probable future values. Because of the possibility of valuable suggestions, it should include as a minimum, where not already available, the translation and summarizing of the systems of forest taxation now used in selected foreign countries and the broad relation of these systems to the general taxation system. It should possibly include a study of the compound interest problem in relation to timber growing and taxation as an element in the cost of production.

How the Data will be Collected

The work may be begun in only one State in each region, selected to take advantage of the best available records, of the most favorable opportunities for cooperation, and of the most favorable public and legislative opinion for the serious consideration of findings.

A particular effort will be made to secure the cooperation of State Tax Commissions, State forestry organizations, local county and township officials, the Bureau of Agricultural Economics of the U. S. Department of Agriculture, Bureau of the Census, and other units of the Federal Government, private interests, taxation specialists in universities and research institutions, etc. The Forest Service may cooperate with existing agencies or initiate the investigations and subsequent steps itself as the conditions in each region indicate which course will be the more effective.

Improved Systems of Forest Taxation

Based upon the data collected, an attempt will be made to select the best of the plans for forest taxation from those already proposed or to devise still others which offer greater promise. Plan or plans selected should:

Place a tax burden on timber comparable with that on other forms of property, taking into account the essentially different nature of timber growing as compared with other forms of business enterprise and the difference between virgin stands and second growth and bare land.

Take into account and provide adequately for the current needs for revenue of local communities.

After the data are in hand outlines will be prepared, including, where necessary, minor adjustments in present practice which are feasible of adoption under existing conditions and the present status of public opinion. The ideal system can only be secured after a longer period of education and adjustment.

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OUR TRAVELING SALESMAN

By Harry Sperling, D-8

Assistant District Forester B. F. Heintzleman recently left for the States on a six months' selling campaign. The territory he will cover is somewhat considerable, being the principal pulp and paper centers of the United States and Canada. But he will work mainly out of New York, Montreal, and San Francisco. His line of goods is also rather pretentious, being some 80 billion ft. B. M. of commercial timber and undeveloped water power resources amounting to over 450,000 H. P., all located on the Tongass National Forest in S. E. Alaska.

The Service has for several years past endeavored to interest manufacturers of pulp and paper in the vast timber and water power resources on the Tongass. Heretofore, the methods used were more or less indirect. This is the first personal sales effort made direct to the established industry.

While on this detail, Mr. Heintzleman will make a thorough study of the pulp and paper industry, from both the manufacturing and marketing standpoints, to determine whether present economic conditions allow for an immediate expansion of it to the Territory. He will study particularly the terms under which American manufacturers buy Canadian timber, with a view to molding our present requirements into such shape as Canadian and American experience has shown is practicable and attractive to prospective capital. In this connection, a decided step towards liberalizing large pulp-wood sale contract requirements in Alaska was recently taken when the Secretary approved an amendment to Reg. S-6 calling for the first redetermination of prices after an interval of not more than ten years instead of five as in the past. This increase of time does away, to some extent, with the most serious objection raised by interested parties. Another liberal change was authorized by the Secretary which increases the maximum sale for pulp and paper manufacturing purposes from two billion board feet to three billion.

The local press, chambers of commerce, and Alaskans in general are enthusiastic and optimistic over Mr. Heintzleman's detail and consider it an important step towards bringing to Alaska a permanent industry.

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ANOTHER WORD ABOUT WOODS FERTILIZER

By W. R. Mattoon, Washington

Chemical analysis is one thing and actual test, or demonstration, is another.

Mr. C. E. Baxter, forester in charge of 60,000 acres of the Long-Bell Lumber Company's timber lands in Arkansas, once wanted to know just what woods humus would do to make field crops grow. To find that out, he went about it in the following manner and got some interesting results.

He raked and scraped the forest floor clean over one acre of heavy oak woods in Gibson County, Tennessee. The material was spread over one acre of ordinary crop land and worked into the soil. The land was planted with ordinary field crops, such as cotton and corn, and the results carefully recorded on this acre and on a similar but untreated adjacent acre.

The first year the acre treated with woods humus yielded crops worth $20.65 more than those from the untreated acre; the second year, $14.80 more; and the third year, $13.00. The aggregate return was $48.45 greater, due entirely to the nitrogen, phosphoric acid, and potash contained in the humus. The cultivation was the same on the two acres. The fertilizer had cost him $16.00 for gathering and applying it to the field. Thus it was a very profitable piece of work. The story is incomplete because the comparative records of yields were taken for only three years, at the end of which period the land fertilized with woods humus was going strong in producing heavier crop yields than those from the adjacent land not so treated.

Incidentally Mr. Baxter is making good headway in winning local public sentiment among farmers in Grant County, Arkansas, against the suicidal method of burning their own woods and those belonging to others.

If any reader has information on this much neglected phase of fire damage and loss, many of us, I am sure, would like to hear about it.

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YE EDITOR'S CORNER

"Grow Trees" on the Air: On Monday evening, February 15, a radio talk was broadcast from WGY Schenectady. It was "Grow Trees" by Colonel Greeley. Hope some of you heard it. By the way - "Grow Trees" is going to be our new slogan. What do you think of it? "Grow Trees. It Pays. Prevent Forest Fires."

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Two New Forest Service Motion Pictures have been released. They are "Trees of Righteousness," a three reeler with a religious theme and a real minister as the principal character (It is aimed at the practice of burning the woods in the Southern States) and one called "What the Forest Means to You," the title of which tells its story. They are to be used in D-7 in an intensive campaign against woods burning.

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The editor wonders, continually wonders, why some of our busy D.F's and their busy assistants do not take advantage of the opportunity to say something in the BULLETIN columns. The BULLETIN is put into the hands of every member of the organization. We suppose they are too much engrossed, each in his own district affairs, to ponder on the fact that the Service should not be a thing that like ancient Gaul was divided into so many parts, but rather a coherent body needing the stimulus of thought flowing from and to its various vital centers and providing it with spiritual food. But we are only a badgered editor distressed over the lack of good copy and perhaps we cannot comprehend the potent reasons why D.F.'s and A.D.F's. do not write for the BULLETIN.

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"What is the Significance of the 'Father and Son' Comment as applied to Guthrie's getting the Charles Lathrop Pack Prize?" writes an anxious reader. To which we sadly reply "None." The comment acquires significance only in connection with the Guthrie note which appears in this issue.

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WASHINGTON NOTES

Fitzwater Transfers to Washington: Mr. J. A. Fitzwater will join the Washington office staff early in March. He comes to take one of the vacant inspectorships in the Branch of Management. With a background of work as a student assistant, forest assistant, deputy supervisor, supervisor, and district office inspector - secured in three districts - he takes up his new work on a country-wide basis with unusual advantages. His recent work in District 4 is well, and favorably, known to many.--E.E.C.

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Prevent Forest Fires - It Pays: Ranger Garst of the Datil suggests that "Rubber cancellation stamps could be made cheaply at Ogden and it is believed that local postmasters would gladly cooperate with the Forest Service at least during American Forest Week and through the fire season."

Kircher says "Ok if you don't send too many orders to Ogden"; so be temperate, and see your postmaster first.

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"But the Poor We Have Always With Us": Writing of the present grazing controversy, Colonel Breen of Flagstaff, Arizona, former Supervisor of the old Black Mesa and San Francisco Mountain Forest Reserve now included in the Coconino, Tusayan, and Sitgreaves Forests, says in a personal letter:

"When I left the Forest Service back in 1908, after a ten-year struggle with the grazing problem, it was intimated that everything would soon be settled in an amicable manner and run smooth. However, if it should happen that I returned to this old sphere in 2026, about the first thing that would interest me would be - "What is being done about the grazing problem?"

"Aint it the truth?"--W.C.B.

DISTRICT 1 - NORTHERN DISTRICT

Training Camps: Two ranger-training camps are projected for next spring. These will be for the purpose of instructing and training the new men who will enter the Service this winter and those who may be selected to fill probable vacancies next season. The locations of these camps have not yet been selected, but the dates and men in charge will be:

Eastern Group: Month of May, with Supervisor J. B. Taylor and Assistant Supervisor W. E. Lockhart as instructors.

Western Group: Month of April, with District Forest Inspector W. W. White and Supervisor L. G. Hornby as instructors.

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Pre-Suppression? P. J. O'Brien, law enforcement officer of the District, has just completed a three weeks lecture tour of eastern Montana towns. Under the auspices of the city schools, civic and luncheon clubs, and Boy Scouts, he spoke from one to three times in each of 14 of the principal towns along the Great Northern Railway. More than 3,000 people, of whom 350 were adults and the rest pupils of the schools, listened to these lectures. He spoke on "Forests and Man," "Forestry as a Vocation," and "Tree Planting in the Plains Region." He also gave an illustrated talk on "Life Habits of Trees" where facilities permitted. He reports that the people of that treeless section are keenly interested in the forest problem, particularly in the benefits to be derived from Sections 4 and 5 of the Clarke-McNary Act.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Planting During 1925: Figures recently compiled show that 5790 acres were planted in District 2 during 1925. This is 1429 acres less than the high acreage that was planted in 1924. Part of the deficit is due to the fact that it was necessary to close up the Pike planting operations last spring on account of drought. Only 360 acres had been planted when the operation was shut down and usually close to 1000 acres are planted on this Forest.

It was necessary to close down Minnesota and Michigan operations last fall on account of early snows; so that neither Forest has completed its expected quota. At that, however, the Michigan Forest, with a record of 3311.5 acres for the year, surpassed its previous high record of 1924 by 140 acres.

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National Western Livestock Show Exhibit: The Forest Service was again represented by an exhibit on the floor of the Industrial Building at the Denver Stock Show. This exhibit, prepared and supplied by the Office of Exhibits, showed an abandoned camp fire in three stages. The first, some harmless, glowing embers; the second, a raging forest fire; and third, the impressive result. The mechanical device attracted large crowds and, even though completely out of the fire season, seemed to direct a large amount of attention to this always important question.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

Apache Third in Timber: Timber estimates of the present Apache, while not complete, indicate a sawtimber stand of 3,476,697 M feet. This places the Apache third in the District, Sitgreaves coming first with some 4,243,000 M., and the Coconino second with 3,900,000. The woodland stand is estimated at 1,092,000 cords.

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Many Birds in Sabino Canyon of Coronado: Forty-six varieties of birds, a number of which are of rare species, according to the Tucson, Arizona, Daily Independent, have been observed in Sabino Canyon by H. H. Kimball, collector for the San Diego Zoo who completed his count a few days ago. Great numbers of birds are said to shelter there during every winter season, and it is likely the canyon harbors a larger congregation of different kinds of bird life than any other one area in Arizona. Sabino Canyon with its running water, old Indian fort ruins, abundant bird, animal and plant life, and picturesque scenery has long been one of the most popular recreation places of the Coronado Forest.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Bugs: The Cache has an insect infestation in lodgepole. They have been trying to stop the epidemic by means of regular sales - small Commercial and S-22 - without results. They have decided to issue free administrative use permits for green infested trees and are putting on a real campaign to get a lot of ranchers to take out timber. They are using the free use permit form since all permits are small. They cross out the word "Free" at the top of the form and write in the word "Administrative." They cross out printed clause 4 on the back of the form and staple the following mimeographed clause 4 to the permit form given the permittees:

4. Dispose of insect infested logs in one of the three ways hereinafter indicated, at permittee's option:

(a) Peel the insect infested portion of the logs; or

(b) Have the insect infested logs sawed and the slabs burned; or

(c) Remove the insect infested logs at least four miles from any stand of lodgepole pine timber; prior to June 1, 192__.

The permittee further agrees to remove all logs cut under this permit from National Forest lands prior to September 30, 192__. Failure to take action as above outlined forfeits all claim to such logs and the Forest Service will be free to dispose of them to other parties.

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The Ashley has an epidemic of Black Hills beetle in western yellow pine on the east end of the Forest. This epidemic has been going slowly for a number of years. Last year the Vernal-Manila road was constructed close enough to this area so that it is now possible to get some action on it. The Supervisor has sent in an appraisal of the insect infected timber, consisting of about 100,000 feet. The appraisal shows a distinctly minus stumpage value. The Supervisor has, therefore, recommended that free administrative use permits be issued to the sawmill men and others for this timber. This action will be taken.--C.B.M.

DISTRICT 5 - CALIFORNIA DISTRICT

Big Dividends from Water Power: The water power permit business is perhaps the most profitable of any of the forest activities in California, as shown by recent figures compiled by Engineering. New developments are proceeding under the Federal Power Act, and, therefore, the fees from these are not credited directly to the Forest Service. Notwithstanding this, the forest receipts from water power leases are still mounting and will reach about $60,000 for the current year in California.

Credits established on some large projects by deposits made during pre-operation periods are now getting pretty well balanced off, and from now on cash payments will be made covering operation charges. The following shows how the receipts have been increasing during recent years:

1918 - $30,899.36
1919 - 39,331.53
1920 - 42,491.40
1921 - 51,114.79
1922 - $41,763.82
1923 - 40,074.82
1924 - 42,689.98
1925 - 56,465.54
1926 - 60,000.00 (Estimated)

It is of interest to note that 1925 receipts for California exceeded those for all the rest of the States combined by about 50 per cent.

As against the probable return of $60,000 for the current year, the estimated costs of administration of the Forest Service permits is about $3,000, including both the engineering branch and the work of the forest forces. This latter figure does not include the annual expenditure of about $10,000 on Federal Power Commission work. It is believed that no other major line of Forest Service activity approaches this record of producing receipts twenty times as great as the sum required for administration.

This is all the more striking when it is considered that charges for water power development privileges are merely nominal and far less than the actual market value basis employed for the marketing of other uses of the forests. As a matter of fact, the actual value of the power privileges is at least ten times as much as the charges made therefor by the Government. Since most of the power is distributed through the State regulated public utilities, the benefits of the low charges are passed on to the consuming public.--F.E.B.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

"Like Their Daddies Used to Do": An interesting and significant fact in D-6 is that the sons of two Forest Rangers and the son of a former Ranger (now on retired list) entered forest schools in the State of Washington last fall. These are Dahl Kirkpatrick, son of Ranger John Kirkpatrick of the Rainier, and Leonard Brender, son of Ranger John S. Brender of the Wenatchee, who entered the University of Washington, and Nevin McCullough, son of former Ranger Wm. A. McCullough of the Rainier, who entered Pullman last fall.

In Oregon the only case known of is Ranger M. H. Durbin of the Siuslaw, a graduate of the O.A.C. Forest School, and son of Ranger M. S. Durbin.

Thus there are being built up the traditions of forestry in this country. Who knows but perhaps we shall have in time in American forestry the situation so often found in Europe, where for generation after generation there is a forester in a family?--J.D.G.

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Dr. Boyce Back: Dr. John S. Boyce, D-6's genial Plant Pathologist, who has been sojourning "in furrin parts" for some months, has returned to Portland. We hope to publish some accounts later of his experiences while studying the Douglas fir canker abroad, in Scotland, England, Denmark, etc.

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Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

Vol. X, No. 10. Washington, D. C. March 8, 1926.

OUR IMPROVEMENT PROBLEM

By J. C. Kircher, Washington

Construction

Based upon figures collected in the past few years, the improvement needs of the Service (omitting roads and trails, range improvements and recreation improvements) as of June 30, 1925, are--

D-1	$420,000	D-5	$170,000
D-2	118,000	D-6	409,000
D-3	204,000	D-7	160,000
D-4	211,000	D-8	13,000

Total $1,705,000

The statistical reports for 1922, 1923, and 1924 show that the average annual expenditures on construction of protective and administrative improvements for the 3 years were $379,500.

If the figures are even approximately right, they would indicate that the improvement systems on the Forests would be completed in about 4½ years. In the calendar year 1924 construction fell off considerably. It was $336,790. Even on this basis, construction would be completed in about 5 years.

Suppose we look at the individual Districts to see whether they are all coming on at approximately the same rate. The figures for average protective and administrative improvement costs for construction for the years 1922, 1923, and 1924 are--

	Cost of improvements	Years to finish	% Contributed F. Y. 1925
D-1	$85,553	4.9	44.3
D-2	30,354	3.9	53.6
D-3	34,794	6.4	34.9
D-4	67,022	3.1	37.5
D-5	41,538	4.1	47.4
D-6	95,560	4.3	42.4
D-7	21,590	7.4	43.1
D-8	3,089	4.2	37.0
Total average	379,500	4.5	43.0

On this showing, Districts 3 and 7 are somewhat behind and District 4 a little ahead of the others. It must be remembered, though, that the figures cannot be taken as accurate pictures of the situation but rather as indications. On these and other data on file here, it is proposed to make some adjustments in the improvement allotment for 1927. On the whole, though, there are indications that the improvement programs are coming along at nearly the same rate in each District and that we have completed the major portion of them.

Maintenance

During the fiscal year 1925 we spent $462,208 on maintenance of all improvements except roads and trails. This figure includes overhead. During the same period we spent $437,460 from the improvement and sanitation and protection appropriations, the latter, of course, divided between construction and maintenance. It is interesting to note, however, that the total amount spent in maintaining improvements is not much greater than the improvement appropriation. If, then, the construction programs were completed, say in 5 years, the appropriation thereafter could nearly finance all maintenance and the improvements could stand on their own feet without a large contribution from salaries, G. E., and other appropriations.

Will we do it, or will replacements and new things yet unthought of keep us poor?

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THE FORESTER ISSUES MISC. ORDER 146

In order to better correlate grazing research with forest research, and in line with good organization, effective March 1, 1926, the Office of Grazing Research and its personnel is hereby transferred from the Branch of Grazing to the Branch of Research.

By this transfer the Office of Grazing Research, with Mr. W. R. Chapline in charge, will become a distinct unit of the Branch of Research under the immediate supervision of Mr. Earle H. Clapp, as Chief of the Branch of Research.

This transfer carries with it Mr. Dayton and his staff, together with the plant collection, the work and personnel of the Great Basin Experiment Station and the Jornada and Santa Rita Reserves. It will also include the transfer of all technical grazing personnel paid from Range Investigative funds and assigned to the District.

Except as above outlined all technical grazing personnel assigned to the Districts will be under the direction and supervision of the District Forester, as are other technicians in the District.

The Branch of Grazing, as in the past, will assist and advise the District Foresters in the development of their technical grazing force and will also be responsible for the development and application of range reconnaissance, range management, and all matters pertaining to the handling of livestock on National Forest ranges, including the eradication of poisonous plants and statistics of losses of livestock, etc. The Branch of Research will, of course, conduct such investigative work in these fields as it deems advisable.

This transfer will involve close cooperation between the Branch of Grazing and the Branch of Research. The latter will continue to study and secure new technical data and ideas in the development of range management in coordination with other forest resources. The Branch of Grazing and the District offices will be given the fullest opportunities, through the District Investigative Committees, the Branch in Washington, and otherwise, to cooperate in the formulation of investigative programs. As in other units of the Branch of Research, the experts in grazing research will be available upon call to advise the administrative organization on technical questions.

It is expected that close cooperation will be continued with the office of Dr. F. V. Coville in the Bureau of Plant Industry.

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READING TRADE JOURNALS

By [illegible] E. Barnes, Washington

The question of giving the necessary time to the reading of trade journals is one which we hear from in the field continually. Where a Supervisor is away from his office for several weeks at a time and returns to find a desk full of papers with perhaps a dozen copies of lumber and livestock journals awaiting his attention, he is very apt to check his name off the list on the journals and send them on without looking them over. This is an unfortunate situation, because in my opinion we are all professional men and no wide-awake professional man today dreams of neglecting his trade literature.

The Supervisor on a Forest where grazing and timber sales are leading activities must keep himself abreast of current literature through reading, or fall behind the procession. I think the greatest difficulty with the most of our men is that they do not know how to skim through magazines and publications and select from them by means of the headings the items they feel should be read. Personally, I endeavor to keep abreast with all the leading livestock and agricultural papers and for many years have trained myself to run over them hastily, selecting from the headings the articles which appeal to me as worth while closer reading. Those papers which contain nothing of interest to me I either pass on or throw in the wastebasket. Those which I want to read I either run through at once or at some later time as opportunity offers. If they are my own copies I cut out the item and leave it in my basket to be read and analyzed later when opportunity affords.

This habit of skimming through or "heading reading" is one which any man can train himself to do without much trouble. Once the habit is formed the running through a large pile of magazines or papers loses seventy-five per cent of its terrors.

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REST FOR THE WEARY

News Item-Vibrations of Fiddle Bow on Saw Puts Out Fire

There is no need to longer fear The ravages of fire, No longer shall our woodlands seem an Indian funeral pyre. When demon flames break out now'days In forests tall and green We put them out in modern ways Both restful and serene. If lookouts cry "I see a smoke 'Bout thirty miles away" We don't pack up the old gray mule With kettles, tools and hay. There's no more use for AK sheets To add up by the quire, This music system surely beats Old ways of fighting fire. Like radio, this stuff we use Just travels through the air, The only tools we have to have, A saw and bow of hair. When news comes trickling in to us That fire is round about We draw the bow across the saw And Lo! Behold! It's out. The tunes that now we have to learn Are easy to acquire, We start a few harmonics That will vibrate toward the fire. Instead of thundering down a gulch Or panting up a hill We fight the fire while eating lunch All quiet and tranquil. Refrain. When the fire bell rings don't run to get a crew, Just take the little bow and play a tune. It may be "Annie Laurie," "Brown Eyes What Makes You Blue?" Or something nice about the silvery moon. We know old Nero fiddled with Rome a burning town, And Apollo also struck the blooming lyre, But neither of them ever dreamed a ranger could sit down, And with musical vibrations fight a fire.--(In cases like this of sporadic outbreaks of poetry we always protect our contributors by suppressing his or her name.)

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YE EDITOR'S CORNER

We are sending each District a brace of copies of "The Public Relations of Forestry" by J. D. Guthrie, A.D.F. in charge of P.R. in District 6. Guthrie won the prize of five hundred dollars with his essay, and there are rumors floating about that he is going to spend every cent of it on a trip to Rome for the purpose of attending the International Forestry Congress to be held there from April 29 to May 5. Bon Voyage if it's true, Guthrie.

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Has anybody seen anything of the new Assistant Forester in charge of Public Relations? Information leading to his discovery will be greatly appreciated.--Anxious.

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At our Service meeting Mr. Sherman asked Mr. Show, who is in Washington for a short time, to tell how it feels to be a prospective District Forester with a head presumably buzzing with plans and specifications.

However, Show would only confess to being with us as a Research man trying hard to get some bulletins through the mill before becoming a D. F. He doesn't look worried.

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WASHINGTON NOTES

Doings on the "Hill." It is understood that the conferees have agreed on the First Deficiency bill. Just as soon as it becomes a law, set-ups of money will be made to the Districts. Two million dollars will be set aside for Forest Highways and $1,775,000 for the Forest Development Fund. This has been apportioned among the States and Districts.

On the afternoon of February 20, the Committee reported out favorably Mr. Dowell's revised bill which authorizes an appropriation of $75,000,000 for Federal Aid for each of the fiscal years 1928 and 1929 and also authorizes $7,500,000 for Forest roads for each of the same two years. The bill contains no legislative changes except a very minor one relative to apportionments of Forest road money. Mr. Dowell's plan is to have other legislative changes contained in separate bills.

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Waste Prevention Contest: The National Lumber Manufacturers' Association is offering a purse of $2,000 for ideas which will result in waste prevention and closer utilization of lumber. The prizes will be divided as follows: first, $1,000; second, $500; three at $100 each, four at $50 each. To prevent waste of material, either in the woods operations or in the sawmill, is the primary object. However, suggestions or devices which will actually result in a reduction of manufacturing costs will be considered to fall within the scope of the contest. Merely calling attention to existing wastes, or elaborating impractical schemes, will not meet the intent of this competition. Such entries, as well as those which simply point out sources of waste already known to every manufacturer, will not be considered. Entries must be original. They must either save material or labor, or, in some other way, reduce the production cost of lumber. The award committee reserves the right to withhold prizes should the contest fail to develop practical waste prevention devices to claim them. The number of prizes awarded will depend upon the utility of the contest entries and their general adaptability to present-day manufacturing processes in the lumber industry. Contest closes April 1, 1926. Suggestions should be submitted to the National Lumber Manufacturers Association, Transportation Building, Washington, D. C.

FOREST PRODUCTS LABORATORY

To Study European Wood Preservation Methods: George M. Hunt, head of the wood preservation section of the Laboratory, will sail for England early in March to make a survey of European wood-preserving methods and to collect European service records on chemically treated railroad ties, mine timbers, posts, and poles. He expects to visit England, Belgium, France, Italy, Switzerland, Austria, Hungary, Czecho Slovakia, Germany, Denmark, Sweden, Norway, Holland and possibly other countries. The entire trip will require about five months.

The Laboratory is particularly interested in discovering the merits of a number of new wood preservatives recently developed in Europe, some of which are now being promoted in this country.

In addition to the wood preservation studies Mr. Hunt will study the progress of forest products research abroad, visiting in particular the newly established Forest Products Research Laboratory of England. In Switzerland he will investigate the Hetzer system for forming large timbers by gluing boards together.

Mr. Hunt will arrive in Italy late in April and will attend the World's Forestry Congress which the Italian Government has invited to assemble in Rome April 29 to May 5.

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DISTRICT 1 - NORTHERN DISTRICT

Timber Cut on the Kaniksu: The largest cut of timber in the history of the Kaniksu National Forest was made during 1925 when a total of 35,828,000 feet B. M. was cut with a total value of $186,517.72. The cut by species was as follows: White pine, 46 per cent; yellow pine, 2 per cent; spruce, 3 per cent; cedar, 17 per cent; and Douglas fir, larch, white fir and hemlock, 32 per cent. Included in the cedar are 664,318 lineal feet of cedar poles and piling. The average stumpage price received was $5.20 per thousand B. M.

A total of 1496 acres was cut over with an average cut of 24,000 feet B. M. per acre.

One sale was made on the Lower West Branch of Priest River, involving 170 acres from which a total of 6,225,000 feet B. M. of sawtimber and 3,020 cedar poles was cut. Fifty-two per cent of the sawtimber was white pine which was sold at the rates per thousand B. M. of $12.50 for stumpage and $1.80 for slash disposal and silvicultural measures. The cedar poles were sold at the rates per lineal foot of 3 cents stumpage and 1 cent for slash disposal. The total receipts for stumpage from this area amounted to $46,574.35, or an average of $273.97 per acre. The timber was very much overmature and cut out 25 per cent defective.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

More Broomtail Reconnaissance: In the February 1 issue of the SERVICE BULLETIN D-5 tells how they did grazing reconnaissance on the Stanislaus, but D-2 can go one better.

During the field season of 1924, 408,716 acres were examined by extensive reconnaissance on the Rio Grande by one man working alone at a cost of $.00239 per acre.

During the field season of 1925, 409,921 acres were examined by extensive reconnaissance on this same Forest by the same man at a cost of $.0029 per acre.

The high elevation of this Forest permits only a short field season and the heavy rains make work for the full day impossible.

U.S.G.S. quadrangle enlargements at a scale of 2 inches to a mile were used for mapping and control. All work was done entirely on horseback and the results secured will meet the needs in so far as they can be applied. An average of 5,000 acres per day was established in 1924 and maintained in 1925 in the face of abnormally heavy rains.--P.B.L.

Note: Lister in the above should have stated that he got out early and did about 8 hours' field work by about one or two o'clock and used the rainy afternoons for write-ups and compilation work in camp.--J.H.H.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

America Beautiful Association: "Down with the Billboard!" is the theme of an organization, the America Beautiful Association, which is sending out communications by a chain letter system to discourage the marring of the beauty of the American landscape with signs and billboards. The recipient of the organization's letter is asked to "promise my sense of decency and my love of the beautiful that so far as I can conveniently do so I will refrain from buying merchandise from those manufacturers and dealers who mar the beauty of the American landscape with signs and billboards." The recipient is further asked to send the national secretary of the America Beautiful Association a signed declaration of his sentiments and to mail to each of two other American citizens a copy of the organization's letter.

According to the Prescott Dells, this association is beginning to be a factor in the elimination of highway advertising, since the State Highway Department has recently ordered all signs within the right of way on State highways to be removed.

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Coconino County Acquires Buffalo Herd: The County Board of Supervisors has secured an option on 80 buffalo which were originally owned by "Buffalo" Jones and now by Uncle Jimmy Owens of the Kaibab country. It is the plan of the county to acquire these buffalo so that they may be public property and the herd permanently retained in the region.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Good Goods - Small Packages: There was recently forwarded to Washington for their information a rather unique management plan for the Gilmore compartment of the Lemhi circle, on the Salmon Forest, prepared by F.H. Eyre. The plan covers an area of some 27,000 acres, of which 5,000 acres contain merchantable timber. The prescribed annual cut is 34 M linear feet with the prediction that this cut can be increased in the second cutting cycle, or at the end of 37 years, to 42 M linear feet. The plan is for an unusually small area, yet is needed to analyze the situation with reference to the Gilmore mines. The plan indicates that the Gilmore mines can be supplied indefinitely from this unit, assuming they operate at about the same average rate that they have the last 15 years.

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District Forester R. H. Rutledge recently spoke to the Provo Kiwanis Club on the subject of the National Forests of Utah. Mark Anderson, formerly of the Forest Service, is president of the Provo Kiwanians and he wishes to bring the National Forests not only to the attention of the local body but also to Kiwanians throughout Utah.

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DISTRICT 5 - CALIFORNIA DISTRICT

Los Angeles Schools Take Up Forestry: Through the interest and efforts in forestry of the Superintendent of Schools of Los Angeles, the school board has employed Francis Fultz and W. R. Tanner to take charge of this activity in the public schools and prepare a reforestation program. The first work will be undertaken on Clear Creek, a branch of the Big Tujunga, Angeles National Forest, on a part of the area that was fire swept last year. The local holly (Toyon) will be the species used for planting. Additional field stock will also be grown in the nurseries which have been established at all the large schools in the city.

In connection with this planting plan, a camp large enough to take care of 50 children will be established at the Hansen Ranch on the Big Tujunga. Supervisor George Cecil is cooperating with the city in furnishing necessary tents, bedding, tools, etc., while County Forester Spence Taylor will provide necessary transportation and also coniferous seedlings to be planted with the holly seed.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

The Peavy Arboretum of the School of Forestry at O.A.C. was dedicated January 23. This is a 340-acre tract near Corvallis, part of which will be used as an experimental and demonstration forest and the open ground planted up with exotics. After a picnic lunch in the open air beside the 64-foot log cabin just built by the students, speeches were made by Judge Weatherford, Chairman of the Board of Regents, by Dean Peavy accepting the tract for the school, by District Forester Granger on "Forestry: A Look Back and a Look Ahead," and by Director Munger on "The Forester's Laboratory."

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DISTRICT 7 - EASTERN DISTRICT

Get Out the Trusty Old Flint Lock! A few weeks ago three of a band of five coyotes were killed on the Shenandoah - after some hunters had given chase for about 5 miles - following the killing of some 20 sheep and a lot of chickens on a farm at the foot of a mountain. On court day one animal was brought into Harrisonburg and was identified as a coyote. It had been called everything from a big blue fox to an opossum, but there is no doubt that it was a coyote.

The mystery of how the animals got into that section was not cleared up until Mac Hart, Secretary of the State Game Commission, told how a number of coyotes had been brought in and turned loose in Eastern Virginia by fox hunters. These animals probably escaped and worked their way across the Blue Ridge into the Massanutten division of the Forest.--S.H.M.

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Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

Vol. X, No. 11. Washington, D. C. March 15, 1926.

FIRE CONTROL PREPAREDNESS

By Evan W. Kelley, D-7

February - the opening month of the spring fire season, the door to March - the peak month of our first annual fire season, is over.

The time has come for preparedness stock-taking. The time is here to ask ourselves pointed questions - to make self-inspections and to be "hard-boiled" in these self-examinations. As a general opening question, to put it in a personal form, let us ask ourselves: "Have my fire prevention thinking, plans building, and development of requisite skill to do well the jobs contemplated by effective fire control kept pace with the advancing season, lessons I have learned in the past, and the ideas advanced in the District Fire Hand-Book?" Follow this with the master question: "Am I prepared?" Preparedness is a big order. Get out your tickler list and go after yourself hard. Demand of yourself a detailed answer to the following questions:

"Is my fire plan completed? For the Forest? For each Ranger District? What about the fire prevention chapters? Have I fashioned it after the outline in the Fire Hand-Book? Have I analyzed each risk and sub-risk and does my plan provide counteracting means with punch for each? For instance, what specific thing have I set up in my plan designed to reduce brush-burning fires? Hunters' fires? Grazers' fires? and incendiaries' fires?"

If such an analysis is not made and if the fire plan does not set up things to be done around each individual risk of each Forest and each Ranger District, the plan is not complete.

The next questions should border around action.

"Am I doing the jobs set forth in the Fire Prevention Plan, to be done?" (Here remember your priorities.) "What about indirect means of prevention? Does my plan set forth ways to reach people in the various indirect ways, indicated in the Fire Hand-Book? Are my bulletins and other educational literature on my shelves? Are my 'wolf' bookmarkers in stock, or have I placed them in the hands of the people of my region? What special schemes have I developed for the distribution of educational matter and what devices have I originated to make each piece of such material register as it is handed to the public; to leave its mark upon the mind of the boys and girls; to pierce the shell of the mountain rancher; to impress the school teacher; to dig and bestir the interest of the local storekeeper; to rouse the positive, active support of the people in general of my region." If no device, scheme, or special plan has been thought out and carried out, then put it down that you have not completed your fire prevention plan and that you have yet a big job to do in order to make fire prevention efforts PREVENT and to meet the standards of fire prevention effectiveness which were established at the fire conferences of last July.

While it does not pay to cry over spilt milk, it may often be worth while to contemplate the cause. Just so it might be worth our time to contemplate the cause and to study and reflect upon the 1925 fire record. In comparing it with the two previous 5-year average periods and with the 1924 record, certain figures, like dancing imps, seemingly leap out from their respective blocks, do a devilish jig before one's eyes, and mockingly demonstrate their onerous presence and growing power. With fiendish delight, they seem to cry out their challenge: "What are you going to do about it?" Study these figures:

5-year average	Railroads	Campers & smokers	Brush burners	Incendiaries	Lumbering
1920-1924	61.6	120.6	40.2	499.2	33.2
1921-1925	59.4	149.8	49.8	635.8	34.4
1925	70.0	207.0	77.0	746.0	47.0

What Forests - what Ranger Districts - have contributed to the increase in railroad fires? Or have not effected a decrease? Railroads in 1925 caused just twice as many fires as in 1924. This record carries either a defy from the operator, or cogently demonstrates the inadequacy of our fire prevention efforts. Which is it? What are the facts?

What Forests did not hold down the lid on campers and on smokers? What Forest and what Ranger District let go its grip on the brush burner? Not since 1917 has he been so active. The brush burner, the man under our thumb, so to speak, has doubled his record of criminal carelessness in 1925, as compared with 1924. A painful rebound and a mocking challenge!!

Where is the diabolical incendiary tightening his throttling grip, evidently with greater power every year?

What about the increase of thirteen lumbering fires? Where did they occur? Were they from the activities of Government stumpage operators? At any rate, what is the cause behind the cause? What Forest officer, if any, was responsible?

Has each Forest and each Ranger District studied its record for 1925, compared it with the record of previous years, and the Forest 5-year average? Has each fire contributing to the expanded record been painstakingly studied? Studied with the design of identifying all facts, determining all the "whys" and, as the outcome of such a study, has a definite, pin-sticking, fire prevention plan for 1926 been built up around each risk, to be so executed as to deal death blows to the expanding power of District 7's man-caused risk?

Those Forests and Ranger Districts whose records have furnished food for sustaining the vitality of these mocking imps have an interesting job ahead. The whole Service will watch, critically, to see what is done about it.

WIND DISSEMINATION OF DOUGLAS FIR SEED

By Leo A. Isaac, Pacific Northwest For. Exp. Sta.

The theory that wind is the chief carrier of Douglas fir seed is quite generally accepted, but just how far and how thickly it is sown is the point that has puzzled foresters. The story is partly told by a simple experiment recently made by the Pacific Northwest Forest Experiment Station. By the use of a box kite seed was raised to the height of a Douglas fir tree and released to drift with the wind and fall on canvases spread at intervals for more than a quarter of a mile to leeward. The equipment used consisted of a portable anemometer, a 5-foot winged box kite, a paper carton that would hold about a pound of seed, and a number of new 11x15 tent flies. The test was made at Pearson Field, the Government aviation grounds at Vancouver, Washington, where there was ample space to spread the canvases.

The seed used was extracted from the cones by hand and carefully handled to avoid breaking the frail wings. Lots of about 25,000 seeds each were placed in a round carton which was tied bottom side up to the kite string, the hinged cover being tied shut by a fine thread. Markers on the tripping string indicated when the desired height was reached and a jerk snapped the fine thread on the cover and released the seed in the air. A few of the seeds, the wings of which had been broken, fell to the earth like rain landing only a short distance beyond the point of release. The winged seed, their downward flight retarded by their spinning motion, formed in a tiny cloud and floated down, the wind taking a direct and narrow course, relatively few falling for several hundred feet.

On the 600-foot line the catch showed a fall of 250 winged seed to the acre. At 850 feet it had increased to 40,000, and at 1100 feet out 302 seed fell on a 11x15 foot canvas, making the maximum of 80,000 seed to the acre. The most distant line of canvases, 1600 feet out, showed that the fall had again decreased to 250 to the acre. Some seed traveled a considerable distance beyond that point as men stationed there saw seed passing still several feet in the air.

The results were somewhat surprising in view of the fact that the portable anemometer, six feet above the level of the field, measured a surface wind of but 3 miles an hour while the test was being made.

Cutting tests showed that the percentage of sound seed at the 1[illegible]-foot point was normal for the lot, the per cent being above normal up to that point and decreasing from there out.

It is not intended that this test should reproduce natural dissemination but it does demonstrate seeding possibilities of Douglas fir and will give the forester an idea of what to expect from seed trees or adjoining green timber when germination and survival conditions are known.

ATTENTION, BUGOLOGISTS!

By L. C. Pratt, D-8

Chugach timber appears to be as edible to bugs of one kind and another as does some of the species in the States. Insects occur in the north which feed on the foliage of the spruces and hemlocks, and Technical Assistant Lutz recently reported a bark beetle in a pure spruce stand that does its dirty work under the bark. Dendroctonus obesus, he calls it. This is a low-sounding name, but nobody on the Chugach protested.

Last spring it was noted that some insect was doing widespread damage to spruce and hemlock foliage, especially on the young growth. This bug, whatever it was, was out in force over a great part of the Forest, its presence being reported at places two or three hundred miles apart. This insect has done no permanent damage as yet, but repeated attacks of such intensity as last year's infestation may eventually result in extensive damage.

In the case of the bark beetle recently reported, its presence seems to be confined to small isolated localities here and there, and to pure spruce stands. Supervisor McDonald had noted its presence quite a few years back in the same stand where Lutz ran onto it, and it does not seem to have spread much in the interval. Nevertheless, notes are being kept on these various depredations, and if the thing develops into a real menace the Chugach may have to send out the S.O.S. to the Bugologist forces.

(Ad in Indianapolis Star)

WANTED—We have several hundred cords of stove wood, green, we will give to party who will remove same, with brush.

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YE EDITOR'S CORNER

District Forester Kelley's Article - The only way we can get anything from a D. F. for the SERVICE BULLETIN is to steal it, and our delicate sense of the proprieties demands that in such cases we acknowledge the indiscretion. This is our second offense. The last theft was from Pooler. We are resolved that willy-nilly our BULLETIN shall go to press. District Forester Kelley seems to be trying to prevent fires. Silly? Or is it?

* * *

We have just received what is vulgarly known as a "bawling out." It came from our supposed friends in D-2, which adds to the bitterness. We have, it seems, deleted the most vital part of Fred Johnson's article on "Root Rot at Monument Nursery," said part being that "The problem was put up to Forest Pathology in 1924, and after tests in 1924 and 1925 it was found that aluminum sulphate will apparently control the disease. The exact treatment to use is still being experimented with but this chemical will control the situation." Johnson names Dr. Carl Hartley as responsible for this discovery, and also of the sulphuric acid treatment for damping off.

After seeking vainly for some way to squirm out of the dilemma, we have finally been forced to make this handsome acknowledgment.

WASHINGTON NOTES

President Issues American Forest Week Proclamation: President Coolidge on March 3 signed a proclamation designating April 18-24 as the 1926 American Forest Week. Although giving full weight to the evils resulting from impoverished forest land the President laid stress upon "the outward spread of forestry in industrial practice and land usage." A new feature of this year's campaign is the cooperation with the Canadian Forest Service, which also is observing "Save the Forest Week" from April 18 to 24. Another feature of this year's observance is the formation of State Forest Week Committees in each State and Alaska. These committees will help to localize the campaign.

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Boy Scouts Have Forestry Exhibition: John Cuno's troop of Boy Scouts is still carrying on its work in forestry. They will erect a forest fire lookout tower of poles and rope lashings and have cooperative cross-cut sawing and chopping at the big exposition of Scouting in the arena of the Riding and Hunt Club, 22nd and P Streets, Saturday night, March 20. A thousand feet of rope will be used.

We understand that a man by the name of W. B. Greeley is to have charge of one troop that will put on a stunt. This man, it is said, runs the Forest Service, too. We often wonder how he finds time to do so many things and do them so well.

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Our Regular Family Party: "Some show ---- and for nothing too," was the praiseworthy remark of one of the ladies in the Section of Drafting as she emerged with hordes of other Forest Service people from the New National Museum on March 3, after having seen the two new films: "Trees of Righteousness," and "What the Forest Means to You," prepared especially for use in District 7.

The pictures carried us back to the early days of movies when hand-clapping resounded at the capture of the villain. The temptation to applaud was too great for some in the audience when the signature of old man Weldon was written on the dotted line below the statement: "I WILL NOT BURN THE WOODS ANY MORE."

And say, isn't C. G. Smith a right smart introducer?

You fellows in the field had better arrange to have a family meeting and see these pictures.--J.B.C.

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DISTRICT 1 - NORTHERN DISTRICT

A Good Cooperator: The N. P. Railway Company owns approximately a million and a half acres of land in the Forests of District 1, which, since 1910, it has paid regularly to have patrolled. The agreement now in effect between the company and the Forest Service is a model of fairness and simplicity.

A few points in connection with the cost of this protection are notable:

1. The annual cost to the railway company has increased from approximately $7,000 per year in 1911-12-13 to over $70,000 in 1925.

2. The total investment for protection both of lands within the boundaries of the National Forests and in the areas protected by cooperative associations, from 1911 to 1925, without any interest charges has been about $560,000.

3. The amounts paid to the Forest Service have been:

For protection	$161,000
For fire suppression	123,000
	$284,000

4. In 1925 alone the contribution was:

For protection	$29,830
For fire suppression	28,636
	$58,466

5. The company pays a fair share of Ranger and Supervisor salaries, as well as its part of cost of maintaining pack stock, trails, telephones, etc.

6. The expected contributions to the Forest Service for the next ten years, based on the present cooperative agreement, total over one half million dollars.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Kinkaid Tree Distribution: In the Agricultural Appropriation bill for 1912 an item was inserted by Congressman M. P. Kinkaid, who represented the Sixth Congressional District of Nebraska at that time, providing that trees from the Bessey Nursery be furnished free to residents of his district "so far as they may be spared." Under this item 2,072,745 trees have been furnished to 10,270 people during the past fourteen years, and reports on the work indicate that about fifty per cent of the trees planted survive, although in much of the earlier work the losses were heavier, due to the abandonment of homesteads and the destruction of the trees by fire and cattle.

The Extension Service of the University of Nebraska is now contemplating engaging in tree distribution under the provisions of Section 4 of the Clarke-McNary law. If an agreement is signed up with the Extension Service for this line of work, it will be recommended that the Kinkaid free distribution item be dropped from the Appropriation bill. It is understood that when the 1927 bill was being considered by the House recently, this item was objected to by a representative on the grounds of its being discriminatory and it was nearly wiped out of the bill at that time.

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ONE step won't take you very far,
You have to keep on walking.
ONE word won't tell folks who you are,
You have to keep on talking.
ONE inch won't make you very tall,
You have to keep on growing.
ONE ad can't tell it all,
You have to keep them going.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Beginning to Make a Dent: Up to the first of January the Land Exchange statistical report shows that the Forest Supervisors of District 3 had received a total of 63 land exchange applications. Eighteen of those have been approved by the Secretary of Agriculture for a total of 30,4 acres with a valuation on the offered land of $77,817.00 in exchange for which there has been selected 11,647 acres of National Forest land valued at $19,831.00 and stumpage valued at $45,357.00. Up to the same time five cases had been consummated, 3 on the Carson and one each on the Gi and Prescott.

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New Product from Logging Refuse on Lincoln: The Lincoln has informed this office that a new industry on that Forest is contemplated. The new product is Douglas fir fence posts cut from tops too small for sawlogs on a sale area just completed. The posts are 8 feet long with a top diameter of 4 to 6 inches. The stumpage rate will be three cents per post in the initial sale. This business while small at the start, embracing only 600 posts, gives possible promise of growing in the future. This is an excellent class of sale since it gives better utilization, reduces fire hazard, and develops a new industry which employs additional local labor.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Auld Lang Syne: Digest of a D-2 article by Lumberman Peck of the Washakie, who got his story from an old diary of a Ranger on the Yellowstone Reserve in the Land Office days.

On August 1 he reports that he repaired his pack saddle and got his outfit together for a trip to the Hoback fire. August 2 he started at 8 o'clock in the morning for Hoback Basin and made 25 miles progress that day. On the 3rd he made a little side excursion down the Snake River and put out some fires in some willows. On the 4th he traveled up the Hoback River to the mouth of Granite Creek and on the 5th discovered the fire at the forks of Granite Creek. He then rode the west line of the fire which he found to be eight miles long. The 6th was spent in company with another Ranger inspecting the fire, which had a perimeter of 30 miles at that time. By the 9th he had written to Sheridan, Wyoming, asking for authority to hire men to fight the fire and by the 23rd of August had received the necessary authority. The next day he got 14 men engaged and bought six axes and six shovels and flew at it. Every morning the crew started out at 7 o'clock, took an hour at noon and quit work at 6 o'clock, this working continuing until September 24, when the crew was reduced to two men, probably on account of storm. These two were finally let go October 1. The fire burned at least 61 days, was 8 to 12 miles wide and 10 miles long and did $150,000 worth of damage. Such were the old days.

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DISTRICT 5 - CALIFORNIA DISTRICT

Brush Burning Saves Seed Trees: When we leave trees on a sale area for insurance of a seed supply in case fire destroys the advance reproduction, do the seed trees survive? Does piling and burning the slash protect them? Advocates of leaving the slash in place say not.

The Massack (Plumas) fire of June 13, 1924, burned over 286 acres of Government cut-over land between 8.45 a. m. and 5.00 p. m. On 169 acres of this area, where the slash had been piled and burned before the fire, Evans' cruisers ran 4.24 miles of chain-wide strips on the burn, which gives the following results in number of trees:

D.B.H. Classes	Live	Doubtful	Dead	Total No. of trees
		Per Cent		
6-11	25	4	71	199
12-17	45	19	36	270
18-23	64	18	18	160
24-29	67	10	23	70
30-35	94	-	6	17
36 -	38	-	62	8
Total	47	13	40	724

Almost half of the trees over 6 inches in diameter survived. Of the potential seed trees, or those over 18 inches, 66 per cent survived, or between 7 and 8 trees per acre, enough to insure restocking.

What would have been the results if the slash had been left in place? Has anyone any figures?--D.D.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Loyalty and Courtesy

By Roud McCann, Director Colo. Agri. College

Much has been said and written on the subject of courtesy and loyalty, two cardinal virtues, as necessary in business as in the home, the church, the school, in our social organization and in our Government. This contributor has but one rule of action on those two points and that is, he wants to be loyal to his work and courteous, always to his fellow workers, as well as to the public in all his contacts, personal or written. Often the temptation comes to us to write a sharp reply to some letter that seems to hurt us, or to snap back a sarcastic answer when we are addressed in the same way. It is difficult, sometimes, to keep command of our tongue under such circumstances, but we invariably regret it when we fail to do so.

To deal frankly with each other in discussing our work is fine; to put our own viewpoint forcibly to the front when we must defend a course of action is expected of us, but to criticize unkindly either a fellow worker, or to be guilty of discourtesy toward anyone in our contact with the public, is inexcusable. No organization can flourish on the destructive tendencies of hate, jealousy, or hot-headedness, and a worker indulging such sentiments cannot be loyal to the service because he destroys the spirit of fair play and kindliness which is so necessary to successful public effort of any sort and absolutely essential to educational work. How can we teach if we are pessimistic or bitter? Getting along with each other and with the world in general scores fifty per cent in the measure of an extension worker's usefulness. We all need to apply the score card occasionally to see how we measure up and to remedy defects in conduct that lead to inharmony.

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DISTRICT 7 - EASTERN DISTRICT

Fish. During 1925 there were 690,000 trout fry, 105,300 trout fingerlings, 150,000 trout eggs, and 1,000 trout 5 to 7 inches in length planted within the boundaries of the White Mountain National Forest. It is figured that the above takes care of approximately two-thirds of the needs. However, even after the actual number needed is secured, the desired results will not be obtained until every can of fish is properly planted. More and more of the authorities in this region are turning over to the use of fingerlings, since they are convinced that the planting of fry is not economical.

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Hope Springs Anew: Supervisor Charlton of the Cherokee writes that some western sheep man has become interested in grazing possibilities on the "Ducktown Burn." Even the most worthless land liability of the District may be converted into a unit which pays its way. May the sheep come soon!

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Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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A COMPARISON OF LUMBERING OPERATIONS

By J. A. Donery, D-2

While on detail to the Arkansas Forest during January and February, the differences in methods of operation in connection with lumbering activities there compared with those in District 2 were so apparent that a comparison may be of interest, not only to those engaged in timber sale administration, but also to those in other lines of work.

The similarity of logging conditions on the Harney and Arkansas Forests is so pronounced that a comparison will be drawn between these Forests.

The topography of the two Forests is very similar, the narrow valleys giving way to hillsides that vary from easy slopes to precipitous, rocky, clifflike sidehills on which logging operations are often difficult. The Harney has but one species of commercial timber - western yellow pine - with a small amount of white spruce; while the Arkansas has shortleaf pine and white oak as commercial timber, with a number of other hardwoods considered as unmerchantable. The size of the sales on the two Forests are practically the same, varying from a few hundred thousands to about ten million feet. The stumpage rates on the Harney vary from $1.50 to $6.25 per M, with an average of about $4.25; while on the Arkansas the range is from about $5.50 to $10.00 per M, with an average of close to $7.50, the minimum stumpage rate being $5.50 per M for both pine and oak.

On the Harney, logging roads are in all cases constructed along the creek bottoms and the logs skidded to the roads for loading and hauling on trucks, usually drawn by two horses; while on the Arkansas roads are built either along the creek bottoms or along the tops of ridges, and as a general rule very little skidding is done, the logs being loaded directly from the stump and hauled to the mill on trucks by four mules, the driver riding the "near" pole mule. The ridge roads are used during the wet or rainy season and the bottom roads left for use during late summer and early fall. The amount of timber hauled by each team is practically the same on both Forests, running from 600 to 800 feet to the load.

The Arkansas has two railroad logging operations, both being standard gauge roads, and in each case the logs are transported some distance from the Forest to be manufactured. The Harney is without railroad logging operations, although logs have been shipped by rail over a common carrier road, for manufacture at a plant about fifty miles from the shipping point.

In the number of mills cutting Government timber, the Harney outclasses the Arkansas, as it has 34 mills to 12 on the Arkansas. In point of size of mill, or output, the range on both Forests is from about five thousand to twenty thousand feet, log scale, per day. Except for one or two mills, those on the Harney do not compare with those on the Arkansas in the matter of equipment and mill improvements. All of the Arkansas mills are equipped with edgers and have well constructed tramways for removing the lumber from the mills, while in a number of the Harney mills the edging is done on the head saw and the lumber is piled at the rear of the mill, to be later rehandled and hauled to the yard for piling. The output of lumber per man at the sawmill is considerably greater on the Arkansas than on the Harney, and this is only partly accounted for by the fact that the Arkansas timber is less defective, the average defect for all logs being approximately ten per cent against an average of 25 per cent of the gross scale on the Harney. The mill crew at the Arkansas plants works a full ten-hour day, while a day's work on the Harney is but nine hours.

On the Harney the drying of lumber is accomplished by piling the lumber in the yard and leaving it to air dry for a period of from sixty to ninety days, while on the Arkansas dry kilns are in use, a number of mills using smoke kilns, and one mill cutting about fifteen thousand feet per day is equipped with a steam kiln. The lumber is held in these kilns for from fifty to seventy-two hours, during which time the weight of the lumber is reduced approximately twenty per cent.

One striking feature of logging operations on the Arkansas, as compared with the Harney, is the distance that the finished product must be hauled to market, the shortest hauling distance being fourteen miles, and in one instance trucks were hauling rough lumber twenty-eight miles to the railroad. The usual practice is to haul with five ton G.M.C. or White trucks, and loads of four thousand five hundred feet of rough lumber were being hauled over roads of only average construction. On one operation the lumber was being hauled fourteen miles with teams, as the road would not permit of the use of trucks.

The demand for timber on the two Forests is about equal as all of the chances offered for sale are bid in without hesitation, and on the Arkansas Forest competition is the rule; in many cases three or four bids are received, often considerably in excess of the advertised rates.

The difference in lumber selling prices - $31.50 on the Arkansas against $22.00 for the Harney - is the result of a restricted market for the Harney timber products, while the lumber from the Arkansas is shipped directly into the general market.

Due to its location and nearness to the large lumber consuming centers of the South, a considerable increase can be expected in the sales business of the Arkansas, whereas the restricted railroad market for ties on the Harney indicates that very little increase can be looked for unless outside markets are developed.

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IMPOUNDING, 1925

By Dana Parkinson, D-4

During the past season the impounding regulation was applied effectively on nine Forests, nineteen round-ups having been conducted. The Cache was the first Forest to initiate action under this new regulation. Two thousand seven hundred eighty-eight head of stock were handled, and many of these animals were handled twice. The following shows the disposition of these animals:

Escaped	4	Redeemed	373
Died	8	Sold for less than cost of impounding	614
Claimed and released without charge	13	Sold for over cost of impounding	404
Turned over to Indian agency to sell	64	Total - sold or redeemed	1,391
Found to be permitted or trespassing stock handled under trespass regulations	1,308	Grand total	2,788
Total handled without redemption or sale	1,397		

Aside from the above, notice was served on owners of 198 cattle and 169 horses, which were removed from the Forest without the necessity of impounding.

Cost of impounding ran all the way from $1.25 to $12.91 per head. On one Forest unbranded horses costing $3.47 to impound were purchased for 10¢ a head, branded, and turned loose to drift back onto the Forest.

The total receipts from impounding amounted to $4,588.23. The cost of impounding amounted to $4,647.43, showing a deficit of $59.20. However, owing to technicalities in the regulation, the Forest Service received only $875.12 (redemption fees), and is actually out $3,772.31, which goes into the U. S. Treasury. This does not mean impounding is not a paying proposition for the Service. Supervisors report that in general the stockmen approved of ridding the range of these animals; also the knowledge that horses could be impounded and held for costs had a very beneficial influence in making owners of trespassing stock remove them from the Forest.

Some very interesting experiences were encountered during these round-ups. The Lemhi handled by far the greatest number of stock under this regulation. On one round-up the Supervisor, Ranger and seven men had a string of 30 saddle horses. One night 100 head of horses broke out of the field. On another occasion, the night shift went to sleep and lost 195 head of horses. These horses were all recaptured later, however.

The Cache reports as follows:

"The Indians were very much opposed to the round-up at Pocatello. While their horses have little, if any, value, the Indians dislike very much to dispose of them and even the Indian agent is encountering much opposition to the sale of the horses within the reservation. One day the Indians hid one of their members in the wings near the hidden corral and as a bunch of wild horses were coming in he arose with a blanket and gave them a scare that sent them through the wings and they were never again recovered. At times they became quite insolent. Near the end of the round-up it was necessary to post armed guards to protect the corrals during the day and to guard the horses at night. The Indian agent, however, gave us very good cooperation and definitely disposed of all horses that were turned over to him for sale."

Some of the Forests had very trying times in attempting to determine brands and find the owners. Many horses were disposed of which had no brands and many horses with brands were so worthless that the owners preferred to have them sold rather than claim them.

If proper precautions are employed in carrying out the impounding regulation, we believe a big stride has been made toward better range management.

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YE EDITOR'S CORNER

We were exceedingly pleased to read in a letter written by District Forester Peck to his Supervisors regarding the draft of Conclusions of the Denver conference the following: "I want to encourage you and everyone on the Forest to write articles for either the Service or District Bulletins on any phase of any of the subjects that you feel moved to discuss."

May we not add our urge to that of Col. Peck and assure you of a sympathetic reception for your contribution? May we not, also, venture to hope that you will not permit yourselves to be biased by local leanings in your selection of the particular Bulletin which is to serve as your medium? Be broad-minded.

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Note the D-4 article on marker sheep. How about an article by some well informed wrangler of "Woolies" regarding habits of the highly intelligent sheep? Interesting?

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The new Assistant Forester rolled in this morning (March 15) and was given a cordial welcome. We are, all of us, glad to have "Red" come into our official Washington family, but the Editor feels you ought to know that he looks sad.

Possibly something should be done about it. It may be that, until this sadness wears away, we shall have to place around the walls of his office photo views of that far-away land of the West, where climate is climate and trees is trees, in a word - California.

We will do our best to cheer him, but for awhile, at least, you'd better write to him frequently.

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WASHINGTON NOTES

Oklahoma and Missouri Jump In: From out in the Middle West come two recruits to join the Clarke-McNary cooperating forces. Oklahoma and Missouri through legislation enacted in 1925 are respectively the 31st and 32nd states to qualify for forest fire cooperation. Oklahoma will also cooperate in the distribution of forest planting stock, and Missouri will cooperate in farm forestry extension.

George R. Phillips, formerly Assistant State Forester of Indiana, is the newly appointed State Forester of Oklahoma, with headquarters at Oklahoma City. Frederick Dunlap is the Missouri State Forester, with headquarters at Columbia.

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Additions to National Forests Approved: The Secretary of the Interior has given his approval to two proposed additions which were submitted to him preliminary to their presentation to the National Forest Reservation Commission under Section 8 of the Clarke-McNary Act. One is the addition of somewhat more than 12,000 acres to the Payette Forest in Idaho, and the other the addition of about 15,000 acres to the Hayden National Forest in Colorado. Steps are now being taken to lay these two cases before the National Forest Reservation Commission at its next meeting.

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Revision of Minor Road Manual Completed: Mr. Evans of District 4 has left Washington after spending about 8 weeks here revising the minor road manual. The arrangement of this manual has been almost entirely changed and a very considerable amount of new matter has been included, especially on construction and maintenance methods. Mr. Norcross and Mr. Dort, with assistants, are now engaged in working the draft up into final form for consideration by the Forester and for mimeographing. Much work still remains to be done before it is finally ready.

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FOREST PRODUCTS LABORATORY

Growth-Structure-Properties Studies Started: The old pipe dream - generally found in the cranium of the untrained enthusiast - of growing square trees to reduce waste has given way to anticipation of growing trees "to order," not on the basis of shape but to meet certain requirements as to physical properties. The Forest Products Laboratory has been studying for some time the effect of growth conditions on physical properties. As wood is a porous material made up of extremely small elongated cells it seems probable that differences in the strength of two pieces of the same kind of wood are due to differences in these small structures. Already something is known of how variations in competition for light and soil moisture affect various physical properties. For example, the lumberman recognizes certain differences in the qualities of "virgin growth" and "second growth" timber. To find out more about how these effects are produced by changes in the size of wood cells, in the thickness of the cell walls, and in other ways is the object of a study which the Laboratory is just starting. Dr. Arthur I. Weinstein, who has recently joined the staff, is conducting the study. For some time the study will be confined to the effect on structure of sudden changes in the rate of diameter growth as a result of such influences as thinning, removal of humus by fire, drainage, and increase in amount of available soil moisture.

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DISTRICT 1 - NORTHERN DISTRICT

Provincial National Forests: Supervisor Whitham of the Kaniksu recently made a short trip over the Provincial National Forests of British Columbia with R. C. St. Clair, District Forester at Nelson, B. C. He was impressed with the good roads the Canadians have and the possibilities for the development of forestry. Up to the present time, the Province has only a skeleton fire protective organization and must depend largely upon cooperation. On areas the size of the Kaniksu there would not be over three forest officers. This season they also had bad fires, 1,500 occurring on the Nelson District, where they expended $300,000. There is a great variety of types in the district, ranging from pure yellow pine to white pine, and they have a very complex silvicultural problem. They are just starting piling and burning brush to replace slash burning. The region has great possibilities in recreation and, with the wonderful lakes and mountains, will some day be a second Switzerland.

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Slash Disposal: What is believed to be the largest job of slash disposal ever staged was handled on the Kaniksu Forest during 1925, when the slash from 57,550,000 feet B. M. was piled and the slash from 75,500,000 feet B. M. was burned. The peak of this work was reached about May 1, when 23 crews were in action with a total of 340 men working.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Michigan Fire Special: R. G. Schreck reports splendid progress in connection with the Special Fire Exhibit and Lecture train which is now touring Michigan.

One car, which is equipped for lecture purposes, will seat 103 people, but is frequently crowded to the point of accommodating 120. Twenty-one pieces of literature are being assembled in prize packages, one package for each visitor in the train. While the cars are side-tracked, those in charge take their posts and talk fast and furiously on the all-important subject. When the train starts to roll again, all hands turn in and assemble material for the souvenir packages. At least one town each day is made, sometimes more. The daily attendance in the exhibit car varies from two hundred to over one thousand.

A number of organizations have entertained the party at special fire prevention and conservation banquets since the train has been in progress.

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A MAN'S JOB. A man's job is his best friend. It clothes and feeds his wife and children, pays the rent, and supplies them with the wherewithal to develop and become cultivated. The least a man can do in return is to love his job. A man's job is grateful. It is like a little garden that thrives on love. It will one day flower into fruit worth while for him and his to enjoy. If you ask any successful man the reason for his making good, he will tell you that first and foremost it is because he likes his work - indeed, he loves it. His whole heart and soul are wrapped up in it. His whole physical and mental energies are focused on it. He walks his work, he talks his work, he is entirely inseparable from his work; and that is the way every man worth his salt ought to be if he wants to make his work what it should be and make of himself what he wants to be.--Clipped by J. McL.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Another Wilderness Area Gone: A day or two ago, the Arizona newspapers carried the following dispatch from Clifton: "Clifton prepares for heavy travel to mountain area. Plans call for a celebration at Hannagan Meadow for the opening of a motor highway through one of the last big game countries of the west which until now was reached only by saddle horse and pack animals." (The underlining is mine.) For those of us who knew the pristine glories of the Blue Range on the Apache and among whom there still exists some of the old American pioneer spirit for horse and pack travel in the far places over dim trails, such tidings as the above are enough to make us weep. In ten years or less what will have become of the game and fish, with five hundred or a thousand tin-can tourists camped at Hannagan Meadow? Your true Americans - such types as Boone, Washington, Jackson, Lincoln, and Roosevelt were all wilderness lovers - no swivel-chair warmers or motor-cushion riders were ever listed among the great of the Nation. I can conceive of no greater argument for the retention of the one wilderness area we have left on the Gila (in the entire Southwest) than this invasion of the last of such areas in Arizona.--F.W.

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Chamber of Commerce to Advertise Lincoln Forest: Supervisor Arthur of the Lincoln returned recently from attending the mid-year meeting held at Las Cruces by the Southern New Mexico Chambers of Commerce Association. Plans were made for the publication of a folder, consisting of eight pages, designed for distribution through hotels, barber shops, garages and service stations, in all the communities affiliated with the association. It was decided that 25,000 to 50,000 of these folders should be printed and distributed during the coming tourist season. This folder will carry full advertisement of the four outstanding attractions in Southern New Mexico. These are the Carlsbad Caverns, the

Lincoln National Forest, the Elephant Butte Dam and Lake, and the great mining activities in the southern part of the State.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Thumbs Down: Assistant District Forester Ernest Winkler has returned from a trip to Emery County, where four good meetings were held with local grazing associations to discuss various questions of range management. Chiefly local questions were taken up, but at each meeting the question of grazing boards, organized in accordance with the provisions of the new regulations, was brought to the attention of the meeting to be voted upon. All four of the associations voted the proposition down, stating that everything was going on smoothly between them and the Forest Service, and they felt no need of stockman's boards of appeal. (It may be stated as an aside, that at a recent meeting at Rock Springs, Wyoming, the stockmen rather unenthusiastically went on record as favoring a forest board, while at Cokeville, the proposition was taken under advisement.)

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Stolen from D-1: An interesting item appearing in the last issue of the Northern District Bulletin reports a scheme worked out by the Martinsdale Sheep Company last year, in which they have done away with the black sheep as markers and instead have put large numbers, from 1 to 12, on both sides of certain selected marker sheep. Before this is done a study of the sheep in the herd is made so that 12 sheep can be selected which are normally well scattered throughout the bunch, for sheep have peculiar habits - some have partners and are generally found together; some usually feed on the left hand of the band, some on the right, some in the lead, while others will be at the tail end. Sheep of more nervous temperament are generally found in the center of the band. It is reported that marking by this system has reduced losses from straying far below those in neighboring bands.

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DISTRICT 5 - CALIFORNIA DISTRICT

Santa Barbara Rangers Meet: The Rangers of the Santa Barbara Forest met in Santa Barbara on February 16 and for five days indulged in an active discussion of their problems, fire prevention, planning, recreation, and grazing occupying their attention for the major portion of the time.

Earthquakes also came in for some attention. At 10.18 a. m., Thursday, February 18, while in session in the Federal Building we were visited by a rather sharp quake that lasted some five or six seconds, which allowed two of our out-of-town guests ample time to reach the lawn, and they certainly displayed some speed.

Messrs. Friedhoff and Pitchlynn of San Francisco and Supervisor Boulden of the San Bernardino were with us during most of the meeting and assisted materially in making it a success. Friedhoff and Boulden might have been with us a little longer but they learned of a southbound train leaving shortly after the shake and decided their business elsewhere was most pressing.--W.V.M.

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Coyotes Destroy Quail: During the summer of 1925 the Biological Survey trapped and poisoned coyotes along Kern River in and adjacent to the Sequoia Forest. The contents of the stomachs of 42 animals were analyzed and the remains of quail were found in 16, or 38 per cent of the total number. If this is a fair average, and it no doubt is, as quail are no more numerous there than elsewhere, it is apparent that coyotes are making very heavy inroads on these game birds. It is believed the quail are usually caught at night after they have gone to roost. On two occasions coyotes have been watched making such raids. These animals, by frightening the birds, caused them to leave their roost. They did not fly far, and being confused by darkness, were unable to find refuge in trees or brush so were forced to alight on the ground. The coyote then nosed them out and caught them at his leisure.--Sequoia.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Seattle Laboratory Discontinued: The agreement between the University of Washington and the Forest Service under which the Seattle Forest Products Laboratory has been operated has been discontinued. The primary reason for this discontinuance has been the importance of obtaining the services of a man who could meet satisfactorily the requirements of the university for lectures on timber testing and at the same time of the Forest Service for conducting a study of an investigation of wood waste and better utilization in the Douglas fir forests of the West Coast. Formerly the products investigations were conducted in several small laboratories of this type. Most of these laboratories were consolidated in the Forest Products Laboratory at Madison. The Seattle laboratory is the last of the list.--E.H.C.

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U. S. FOREST SERVICE
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BRUSH PILES, LANDINGS AND WHEEL ROADS IN YELLOW PINE

By E. J. Hanzlik, D-6

If you desire to start a discussion, ask your forester friends to tell you what per cent of a cut-over area, on yellow pine sales, is covered by brush piles. This is a topic on which widely varying views are held, mostly all of which are based on personal observations but no actual data.

To determine this point on a sale area cut under the standard Forest Service marking practice in yellow pine stands in the North Pacific District, a 10-acre plot was staked out on the Crater Forest before actual cutting operations started.

A cruise before cutting showed an average stand of 29,300 board feet per acre, all yellow pine. Cutting operations left a reserve stand of 22½ per cent, removing an average of 22,700 board feet per acre.

Brush was piled in the ordinary fashion immediately after the timber was felled. Logs were bunched with horses, and were hauled by high wheels drawn by horses. Brush was burned in the late fall, little damage resulting from scorching.

A check of the plot after logging showed that there had averaged 19 piles per acre having an average diameter of 9.22 feet. Of these, 10½ per cent was left unburned.

In all, counting both burned spots and unburned, the area covered by brush piles amounted to 1,254 square feet per acre, or 2.88 per cent of the surface area. Of this, 2.61 per cent represented total destruction to growth (burned piles), and 0.27 per cent partial destruction (unburned piles).

Other factors contributing to total destruction of reproduction were log landings and primary wheel roads. For this sale, there is one landing for approximately every 10 acres logged, and in this instance the area occupied averaged 577 square feet per acre, or 1.33 per cent of the area. Primary wheel roads totaled 1,620 square feet per acre, or 3.72 per cent.

Summarizing the above, we have total destruction of reproduction by brush piles on 2.61 per cent of the area, landing 1.33 per cent, and primary wheel roads 3.72 per cent, a total of 7.66 per cent of the area.

Partial destruction to reproduction through unburned piles and primary wheel roads, where it is estimated that about 25 per cent survives, took place on 6,508 square feet per acre, or 14.93 per cent. Of this, the greatest amount of damage was along the secondary wheel roads, which covered 6,390 square feet per acre, or 14.66 per cent of the area.

My guess is that the area estimated as covered by brush piles, given by anyone not having made a detailed study, will be considerably over that obtained by an actual survey.

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WHAT IS PR WORK?

By Grover C. Hougham, Colorado

YE EDITOR invites some "good PR man to reply to Munger's article on "WHAT IS REFORESTATION?" on page 3 of the February 22, 1926, issue of the SERVICE BULLETIN. The word "good" almost prevented his getting this contribution.

Mr. Munger fears that the "spade" has been played up too strong or the "ax" too little, and that danger threatens. Suppose the emphasis had been on the ax and not on the spade? Would not danger threaten, just the same? But suppose these two had been equally emphasized? If such emphasis appeared to be too much in comparison to that on fire, there would still be a danger of - of a different character, perhaps, but nevertheless a danger. Then when we get the spade, the ax, and fire properly correlated and played up in the public mind, what about the "value-of-young-growth" question presented in the same issue by J.F.C., as it looks to the financial cooperator?

The practice of forestry begins to look like the chasing of one danger in the public mind after another, as well as chasing fires. So we have the PR Chief and the Fire Chief, and the work under each; not to mention other branches. I should not mention chasing fires without mentioning and emphasizing preventing fires; and this suggests preventing these dangerous questions which arise in the public mind, or rather using care not to cause them. This is a difficult thing. If it takes a person three or four years in college and a few years in the Service to learn forestry and acquire a workable understanding of its problems, how can we expect to get a workable reaction in the public mind which does not have all that learning and has not time to acquire it? If we say "Woodman, spare that tree," will not a portion of the public point to our timber operations? And if we preach utilization, will not another portion remind us how we so feelingly recited "Woodman, spare that tree?" Our experience has taught us to correlate these two preachments, but not so the public.

Sometimes if we just "saw wood and say nothing" we will be doing good PR work, the chief virtue at times being in saying nothing. Just what to say and when to say it is a challenge to one's PR ability.

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ROAD AND TRAIL CONSTRUCTION

By G. H. Lautz, Washington

From 1912, when Federal funds were first made available for the construction of Forest roads and trails, to the end of the last fiscal year, there had been expended a total of $56,891,914. Of this amount $43,013,056 was obtained from special appropriations made by Congress for the construction of Forest roads and trails, $12,740,135 was obtained from local cooperators, and the remaining $1,138,723 was secured from other Federal funds. This total expenditure has accomplished the construction of 10,022 miles of roads, 21,497 miles of trails; and the maintenance of 13,978 miles of roadway and 38,858 miles of trails.

The work thus far accomplished consists of 3,154 miles of so-called major roads which have been constructed under the direct supervision of the Bureau of Public Roads. These have cost $36,731,801, an average of $11,645 per mile. This average varied from a cost of $3,726 per mile of roadway as constructed in Florida to $25,062 per mile as constructed in California. The minor roads constructed by the local Forest Service force cost $8,440,179. This accomplished the construction and betterment of 6,868 miles of roads at an average cost of $1,229 per mile, which cost is about 10 per cent of the average cost of the major projects. For the combined major and minor roads, the average cost was $4,507. During these same years 21,497 miles of trails were constructed and improved for $4,499,329 which represents an average cost of $209 per mile.

From studies made by the Districts it is estimated that there will be required for the completion of a comprehensive road and trail system for all the Forests the construction of an additional 11,112 miles of roads and 22,682 miles of trails and the reconstruction and improvement of 22,127 miles of existing roads and the reconstruction and improvement of 11,729 miles of existing trails which, it is estimated, will cost approximately $186,186,624 for roads and $6,600,500 for trails.

During the past fiscal year there was accomplished the construction of 1,800 miles of roads and 4,085 miles of trails and the maintenance of 10,867 miles of roadway and 32,686 miles of trails. This represented an expenditure during the year of $12,834,738, of which $2,291,325 was cooperation as secured from State and county authorities. The largest mileage of roadway constructed during the past fiscal year was completed in Oregon - 237 miles. California was a close second with 235 miles. Colorado constructed and improved the maximum mileage of trails - this being 829 miles - while Idaho followed with the construction and improvement of 508 miles.

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SUGAR PINE CONTROL WORK SHOWS HANDSOME PROFIT

By J. M. Miller, Consulting Entomologist, D-5

Control seems to be a paying enterprise against the mountain pine beetle in sugar pine. At least that was the case with the work carried on by the Sugar Pine Lumber Company and the Forest Service on the Whiskey Creek tract of the Sierra National Forest. In May, 1924, $848.75 was spent in cleaning up the infestation on a tract of 9,600 acres of this timber. During the season following this work the loss of sugar pine on the control area declined 84 per cent, while on the surrounding areas there was an increase during the same period of 134 per cent. On this basis the investment of $848.75 yielded a return of $8,494.87 in the value of timber saved. Not a bad investment if we accept these figures which are based upon a hundred per cent cruise and the marking of all bug trees on the areas studied.

All the evidence at hand indicates that the mountain pine beetle responds much more readily to artificial control measures than does its near relative the western pine beetle in yellow pine. The White and Friant Lumber Company, during 1916 and 1917, carried out control measures on the same tract and secured very effective reduction of losses in the sugar pine.

It seems as though the difference in habits of the two species of beetles may have something to do with the difference in results of control which have been secured. It has been shown that the western pine beetle consistently picks out slower growing trees in its attacks. By so doing it is able to maintain itself in trees that are easily overcome. In a large series of sugar pine cores which have recently been studied it was found that the mountain pine beetle shows no tendency whatever toward selection of slower growing trees. This gives us some basis for the theory that, once the number of beetles has been reduced by artificial control work, they are still further held down by the resistance of the fast growing trees which the beetles attack but fail to kill.

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YE EDITOR'S CORNER

Wonder why it is that we never receive a line from the good ladies of our big Forest Service family. When the editor was working and living in a certain district there often came tales of good work by our women folks that were inspiring. These wives and mothers of our men form a splendid part of the F. S. family fabric. Won't some of them please send a contribution to the Editor?

The SERVICE BULLETIN is not for any particular set of employees but for all of us. It would be a much more readable magazine if all of us would try to say something for all of us in an interesting way, and, as we seem to remember having said a number of times before, the editorial staff will be found very sympathetic toward you, because, you see, we like you. This, of course, includes the men.

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Got a couple of healthy kicks on one or two matters to publish in the near future. If you don't like them, say so - in the BULLETIN. We are engaged in a whale of a big job and there is plenty of opportunity for diversity of opinion as to the best way of handling the various phases of it. Consider your idea carefully before sending it in and don't be bitter about it. That is our only suggestion.

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WASHINGTON NOTES

Bienvenidos! By an arrangement just entered into between the Forest Service and Dr. J. R. Alcaraz, Director of Forestry in Mexico, four forest school graduates from that country will shortly come to the United States to study reforestation, silviculture, forest administration, and forest utilization. These students will be assigned one each to the following stations: Monument Nursery, Southwestern Experiment Station, Sierra National Forest, Northfork, California, and the Forest Products Laboratory. They will be given every opportunity to become conversant with the various branches of forestry work carried on at the stations to which they are assigned, and to acquire experience by participating in all activities in the same way as the regular personnel of the Service.

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Farm Radio Making Rapid Growth: There are nearly 1,000,000 radio sets on farms in the United States, the Department of Agriculture estimates in a report on the growth of farm radio during the past five years. In some States there are radio sets on 25 to 40 per cent of all farms. Estimates made by the Department in 1923 showed 145,000 sets in use on farms at that time; 365,000 sets in 1924, and 550,000 sets early in 1925. Increased power and improved broadcasting, together with better receiving sets, the Department believes, "will do much to aid in establishing the permanency of the use of radio for the benefit of agriculture."

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DISTRICT 1 - NORTHERN DISTRICT

Hot Air Then - but Not Now! In the Spokane Chronicle of (about) September 5, 1910, one George Thompson projected himself into the future a mere span of 15 years and wrote as follows:

" *** have a system of patrols, each with a certain district for which he is responsible. Again, there ought to be an inspector over the patrols, and I think he should be required to be in an airship so he could see all over and see every man and what that man was doing. Likewise looking out for fires."

If Mr. Thompson is still in Spokane, and if, most any day last summer, he glanced aloft, he would have been pleased indeed that his advice had been followed, and to those guys who gave him the ha! ha! in 1910, he could have said - "Told you so!"

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"The Story of a Match": is the title of a booklet circulated by the Ohio Match Company. As its name implies, it is the life history of a match, from the felling of the big white pine on the Coeur d'Alene Forest until "you can strike it Anywhere." The booklet would make the subject of an interesting talk to school children (or grown-ups, for that matter), or could be read to them in a few minutes. Copies may be secured by addressing the Ohio Match Company, Wadsworth, Ohio.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

"Ray! for the Pike Plantations": The thinnings that have been started in crowded plantations along the Pikes Peak Auto Highway constitute the most interesting development in the history of planting on the Pike Forest. Last fall 722 trees were dug up by purchasers under Forest Service supervision from the 1912 plantations of Douglas fir and yellow pine. A flat rate of twenty-five cents a tree was charged.

The trees dug last fall had excellent compact, fibrous root systems and were well suited for ornamental planting. The largest order was sold to a landscape architect for planting on the University of Colorado campus. The trees ranged from two to eight feet in height.

The demand for trees resulting from the small sales of last fall started an investigation of the amount of this thinning that could be done. This showed 340 acres - mostly 1912 planting, although some dated back to 1906 - where approximately 100,000 trees could be removed with advantage to the remaining trees and profit to the Government. It is estimated that yellow pine sites in this region will not support more than 300 trees to the acre and Douglas fir about 500 without stagnation. Since the planting was done during that period with a spacing of about 6 x 6, whereas 8 x 8 spacing is now followed, from 150 to 500 trees, or an average of 250 per acre, should be removed. This would bring in a return of $62.50 an acre, or enough to offset the original planting cost of about four acres.

Accordingly, notices have been sent to many commercial nurserymen advising them of the trees for sale. Arrangements have been made with local concerns to dig the trees so that it will be unnecessary for nurserymen to send employees from distant places to supervise the digging and packing. There was an immediate response from many places and orders have been placed for 15,000 trees. Mr. A. H. Hill of the D. Hill Nursery Co. and Mr. R. Douglas of the R. Douglas Sons Nursery, personally visited the plantations and ordered 10,000 and 2,000 trees respectively.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

Government Once Used Camels for Packing in Southwest: Seventy years ago, according to a recent Dearborn Independent, the Secretary of War introduced 75 camels into the Southwest as an experiment in transporting army supplies. A camel was loaded with 1,256 pounds of baled hay while kneeling and calmly arose and walked off with it. On another occasion, six camels carried 3,648 pounds of oats 60 miles in 54 hours while it took two six-mule wagon outfits 96½ hours to transport 3,700 pounds between the same two points. The camels stalked straight across the mountains without roads or trails while the wagon, of course, had to follow prepared ways. On still another occasion, according to the article, when torrential rains had fallen and wagons could not move on account of bottomless mud, twelve camels took 325 pounds each and covered the sixty-miles in the previous established time of 54 hours. Twenty camels were used to carry supplies during the construction of a wagon road from New Mexico to California in 1857 and later on made the pack train or exploring trips in what were then remote parts of the Southwest. The men who used them said in reports that, "The camels encountered hills and mountains of the most difficult nature, crossed streams, traversed prairies. On one day no less than 57 arroyos, 50 to 75 feet deep, were crossed." Picture a strapping brute accoutered with a thousand pounds of rakes, shovels, water bags, fire pumps, provisions and whatnots in a sweeping strike airline to a fire and that without worry about water for the pack animal if the fire can be out in less than eight days.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Field Time: The average field time for various classes of Forest officers has just been compiled. It shows that the Rangers have averaged 189 days in the field, as against 192 days a year ago. The Teton leads with 223 days, although there are 14 Forests that bat over 200.

Technical men (Junior and Senior Foresters) chalk up an average of 177 days, Koziol on the Boise leading with 239 days, and Wilde on the Idaho next with 200.

Among the Assistant Supervisors the average is 163, Farrell of the Wyoming leading with 216 days.

Among the Supervisors the average is 155, the Nevada being in the lead with 192 and five Forests running over 180.

The eleven District Office inspectors show about the same average as the Supervisors, beating them out by a few days. They show an average of 158 days, Woods leading with 198. Four of them go over 180 days.

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DISTRICT 5 - CALIFORNIA DISTRICT

Modern Hatfields: Recently there came into our office a wild-eyed sheepman seeking spring range. A dry winter and about 500 wet ewes in excess of the number his ranch will provide feed for had so depleted his reserve supply of feed that he could visualize a feedless period between March 1 and May 15, the opening date of the spring grazing season, which foreboded a profitless 1926.

The gentleman insisted that we provide him with feed during this period. We told him we could not make the feed grow, but offered to join with him in prayers for rain. For some reason this occasioned much wrath on his part, and brought forth an offer of physical combat, which we respectfully declined. Anyway, that night Jup. Pluv. poured down on this parched community a generous drenching which has continued intermittently ever since. Bountiful spring feed is now assured with which to tide the sheepman's flock over the feedless period, and a very profitable year seems ahead for him.

It seems, however, that the rains came in the midst of his lambing season and the said sheepman has declared that he believes we maliciously prayed for rain knowing that he was in the midst of lambing, and that rain later would have been more beneficial to the feed.

Maybe a proffer of physical combat would receive our serious consideration now.--Inyo.

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Forest Service Uniform: In the old days of 1906 when the Forest Service uniform was first proposed we heard a great deal of talk about how the "man in forest green" would be a distinctive character. Since that time it is interesting to note the increase in popularity of our uniform cloth, and the large number of individual organizations which have adopted it as standard. Among these are the following which have come to our attention in California:

Scout Master of Boy Scouts of America, Officers of the Knights of Columbus, Western Union Messengers, U. S. Marines, Bell hops in hotels, Taxi cab drivers, National Park Rangers, County Fire Wardens, State Forest Rangers, Foresters of private estates, Members of Mountaineering Clubs, Motorcycle cops, and Los Angeles bus drivers.

Distinctive uniform? I'll say!

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Outlook of Lookouts: Sheet "E" of the Chelan Forest fire atlas shows some interesting figures in fire detection. A summary is given below:

Fire discovered by	Year 1922	Year 1923	Year 1924	Year 1925
Primary lookouts	28%	39%	47%	50%
Firemen, patrolmen and other Forest officers	15%	17%	22%	22%
Other citizens	57%	44%	31%	28%

Primaries show a steady improvement since 1922, while outside detection shows a corresponding decrease in percentage. Because of the smoke haze which hung over the Forest about 50% of the time, 1925 was a particularly bad year for detection. However, in spite of the smoke the lookouts added a 3 per cent improvement to this record over 1924. Both were heavy fire years.

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What Others Think! Where did the public ever get the idea that a Forest officer has nothing to do when the field season is over? Nearly every day some one says: "You fellows are having a slack time these days, aren't you?" Right there is a chance for some P.R. Tell them we have a little over two million reports to get out, tools to sharpen and repair, land status to work over; and then if you still have a minute or two to spare, tell them some more.

This problem of working things out with the idea of "the greatest good for the greatest number in the long run" isn't being done with a standard mathematical formula and requires some little thought and can not always be worked out in the morning before breakfast.

Anyway there is a great old feeling of satisfaction in knowing that everything possible is being brought up to date, and that we are getting everything ready to start the working machine on the next big season. And to know that she is going to run faster and smoother than she ever did before.--R. C. B.

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Growing Foresters for Growing Forests: In addition to the three sons of Rangers now at forest schools (mentioned in the SERVICE BULLETIN of March 1), there must be added two more, from Oregon. Supervisor Brown of the Fremont has a son, Ralph, who is taking forestry; and Lumberman John Holtz of the Crater has a son, Ray, studying forestry, both at O.A.C. This totals five from D-6, so far as known.

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DISTRICT 7 - EASTERN DISTRICT

Majestic Stand of Virgin Pine Becomes Part of Allegheny N. F.: Twenty acres of virgin white pine at Hearts Content, Warren County, Pennsylvania, the last stand of any considerable size or value in the United States, have been given in perpetuity to the American people by the firm of Wheeler and Dusenbury, of Endeavor, as a memorial to the founders and pioneers of that remarkable partnership. This gift, worth thousands of dollars, will be a very valuable part of the Allegheny N. F. and will be administered so that it will not only provide a recreation center for all who care to enjoy it, but will remain as an object lesson in forestry.

The firm of Wheeler and Dusenbury secured immense holdings in the Susquehanna and Allegheny valleys as early as 1834. The lumber business in those days was far from easy going and obstacles, panics and hardships were numerous. To commemorate this pioneer spirit, as well as to leave some part of the virgin forest as the early settlers found it for the education and enjoyment of the generations yet unborn, is the real object of this gift at Hearts Content. Public spirited citizens are advocating the project of purchasing additional acreage in this area by the Federal Government in order that 100 acres or more of virgin pine trees,- some of them towering giants of 200 or more feet with 4-5 foot diameters, perfect specimens of the primeval Penn's woods - may be encompassedin one block, thus making an ideal small park, the equal of any in the United States. This twenty acres at Hearts Content will remain, for all time, as one of the finest memorials pioneer spirit has ever had.

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Then and Now: "I didn't know the old place" exclaims A. C. Shaw on his arrival in Arkansas. "Six years ago we struggled hard with the management plans of the Arkansas. We traveled by rail from headquarters to Mena, Waldron, Booneville, and Womble. We could reach but two points by road, Jessieville and Crystal Springs. Telephone connections were nonexistent. If a smoke was discovered we rode our saddle horses or walked 10-15 miles to find out where it was, usually too late to be of assistance. Our work kept us out of touch with the office weeks at a time. Mail followed us all round. How different it is today! We have just ridden 250 miles by car over roads that were impassable at any time of the year in 1920. We have heard half the Forest connected by 'phone at one time to discuss fire situations. Vastly better off - we'll say. Arkansas has traveled a long way. Of course there is still much to be done. In 1920, though, no one could see how it could be accomplished. There was nothing to work with. Today the solution of all problems seems possible. My hat is off to the Arkansas!"

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DISTRICT 8 - ALASKA DISTRICT

Roarin' Borealis. A forest fire in February! Not in Florida or California. But in ALASKA! Harken, ye Rangers of the Sunny South, while we spin a yarn that will bring the sneer of disbelief to your handsome countenances:

On February 14, 1926, Ranger Brady reported the first Chugach fire of the year. It occurred adjacent to the Alaska railroad at about Mile 77, latitude 61° north, which is only 29° from the North Pole - not the Pole of Dr. Cook fame but the one actually erected at top o' earth in the dawn of creation.

The remains of mastodons embedded in glacial deposits of the far North tell us, according to the 'ologists, that this vast domain of Alaska was once a tropical country. Gradually it became glaciated and frigid. Is the pendulum swinging backward? Are we again approaching tropical conditions?

There is a native legend to the effect that at about the time Cook discovered Prince William Sound all the many inlets and fiords of the Sound froze over every year enabling the natives to travel on snowshoes over the level roads thus constructed. Now, except for the shoals at the heads of deep inlets, the waters of Prince William Sound remain open the year round.

Throughout the Chugach during the present winter there was no snow of consequence except at the higher elevations, until late in February. In the Anchorage Ranger District the entire length of the Alaska railroad from Seward to Anchorage, which is our greatest fire hazard area, was practically free from snow until toward the end of February. The fire which occurred on February 14 bears witness to the truth of this statement. Temperatures have hovered around the 50° mark all winter. Fifty above, mind.

While there ~~xx~~ are still three months for snow to accumulate, indications are that we will have nothing like a normal snowfall. This will probably mean an early and severe fire season.--L. C. P.

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There is not one of us who is not an example to some one else. Often our actions are watched by some one, and are accepted as a standard. We may consider ourselves the humblest and the most obscure, but always is there some one else who considers himself humbler and more obscure, and looks to another for precept and example. The most unthought-of saying of ours may be the seed that drops on fertile soil; the smallest action, in our eyes trivial and inconsequential, is an example which is observed and followed by another. Our influence may fall in the most unlikely places:

"This learned I from the shadow of a tree,
Which to and fro swayed o'er my garden wall;
Our shadow-selves, our influence, may fall
Where we can never be."

(From "Twice Thirty" by Edward Bok)

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FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

U. S. FOREST SERVICE
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OBJECTIVES IN CORRELATION OF WORK

By C. E. Rachford, Washington

Recent discussions of grazing on the National Forests emphasize its importance and possibilities. We have been impressed with the fact that grazing is the one activity with which the proper protection and utilization of other resources is most imtimately connected.

Its importance, while exaggerated in many instances, is best illustrated by the demands of the stockmen and the attempt to secure at a minimum price permanent range rights to a public resource of vast proportions. It is further emphasized by a keener recognition of its value in connection with ranch property and community life. Its importance in relation to better fire control has not been minimized. We have been enlightened on the possible improvement in the condition of the resource and administration. We have also learned more about the effect of grazing on other resources and the necessity of more careful planning, better supervision, and execution of plans if the major objectives of the Forest Service are to be met.

The time seems opportune, therefore, to take another look at our main objectives and consider grazing more as a responsibility of the Service as a whole than of the Branch of Grazing alone. It is possible to state these objectives in either of two ways, i. e., sustained production and utilization of forage so as to secure the maximum contribution to the nation's supply of beef, mutton, wool and wild life; or to so regulate and administer grazing as to aid and assist other Branches in obtaining their objectives. Whether we use the one, the other, or both, we find those who contend that the one is incompatible with the other. In other words, there are two opinions diametrically opposed, one represented by that large and influential class of users who believe their rights to be superior to all else, and the other by the ultra-conservationists who believe the grazing of livestock inconsistent with sound conservation principles. Between these two extremes the Branch of Grazing takes its stand - diciples of the happy medium.

We believe the interests of the livestock industry will best be subserved by the continued production of the right kinds and amounts of forage with the degree of utilization necessary to meet the needs and requirements of the range and other resources. Contrary to the accepted opinion of some, grazing is not such a highly specialized and scientific activity that good common horse sense does not apply. True, we have developed the science, but reaching objectives is not nearly so dependent upon undiscovered facts as it is upon the application of everyday knowledge possessed by those men who come in contact with the job on the ground. It is for this reason I emphasize the four fundamentals of good grazing administration - proper number of stock, proper class of stock, proper seasonal use, and proper distribution of stock on the range. While the difficulties in securing each of these is fully appreciated, the factors controlling each have been determined by experience and research and should be well known. We need, of course, more research, more trained personnel, more funds, but these are not so important right at the present time as the application of existing knowledge through the development of simple management plans. The execution of these plans will often depend on our ability to construct the necessary improvements. Funds for this purpose mean more to grazing than all the legislation that might be enacted. They mean more to the stockmen and conservation than all the panaceas so far prescribed.

Grazing, in view of its relation to other resources, becomes the job not solely of the Branch of Grazing but also of each and every other Branch. This is why the Branch of Grazing asks for cooperation and assistance. We want other branches to know more about our problems and we want the benefit of their observations and criticisms. Correlation of work between branches begins right here, the success of which depends largely upon our ability to look upon the job of the Forest Service as a whole rather than each branch considering itself a separate and distinct unit. Furthermore, we must learn to accept criticism in the spirit in which it is given, and I guarantee no alibis will be raised to obscure the main issue. Common sense observations and discussions with men on the job are at least educational and often the means of uncovering a brilliant idea or a bad situation.

And finally, in the words of Kipling:

"It ain't the guns nor armaments,
Nor funds that we can pay,
But close cooperation
That makes us win the day.

It ain't the individual,
Nor the army as a whole,
But the everlastin' teamwork
Of every bloomin' soul."

"TECHNICIANS AND OTHERS"

By Gilbert H. Hutchins and Robert W. Putnam, Malheur

We have been told in effect that forestry is not only a science but also a business, and that as such and because of its peculiarities it requires as essential to its life the services of men who can build roads, trails, canals; who can pack a horse and lead him from the back of another, i. e., so-called practical men. Well, so does the General Electric Company need its armature winders, its salesmen and its turret-lathe-hands - the hewers of wood and drawers of water of its system, but to give them an importance equal to that of the company's engineers is an absurdity which one may be sure the General Electric does not fall into. Yet, these factory workers are just as surely the General Electric's "key men" as are the Rangers those of the Forest Service. The comparison, of course, has its defects, of which the main one is as follows:

The physical sciences are highly developed, while forestry as a science, especially in the United States, is a mere infant in about the same stage of progress as was chemistry in the days of Paracelsus. Consequently, the Forest Service, instead of emulating the General Electric Company, is content to assign non-technical jobs and technical jobs indiscriminately to technical and non-technical men, and to place a high value on work which an ordinary American business concern whould take largely for granted without forgetting its necessity.

We turn to the statement that the Service as a post-graduate school cannot function, the argument being that technical men and non-technical men have in the past marched abreast and now sit in the front chairs side by side. The fact is, of course, that as non-technical men have advanced they have rapidly turned technical and that there has been no remarkable progress by purely non-technical men. In the old days, be it remembered, the schools did not know the forestry they know now; they lacked present-day equipment and did not turn out as highly finished products as they can now, no matter how defective these may be. It has not been many years that decent textbooks have been available. As a result, old time technical men and non-technical men were far more evenly matched than they are now, each knowing practically no forestry at all. Of course, they advanced side by side. But that they will do so in the future, provided no artificial obstacles are placed before the technical men, we presume to doubt.

Most college-bred foresters of to-day, i.e., very recent graduates of forestry schools, have learned (or have been exposed to) a brand of silviculture which contemplated making thinnings and actually controlling, so far as it is humanly possible, the composition of stands and promoting their welfare in various other explicit ways. They also studied, partly learned, and worked up an enthusiasm for a forestry which, while not nearly so far advanced a science as, say, astronomy, is still a science and admirable as such, inasmuch as it is a search for truth and has no traffic with fraud. It is this science (and a "fondly cherished idea" a science may become in certain men) that the Forest Service neophyte must forego, and with it the enthusiasm and admiration he had for forestry as a scinece. The whole may be precipitated very conveniently into the general statement that upon entering the Forest Service, the sooner a college-bred man forgets all the forestry he ever knew, the better off he is. What he has to substitute for it we are at a loss to define. It might possibly be called a mongrel forestry, an octoroon forestry, a cradle science mixed with the most frantic of the life insurance hawker's jargon. It is the forestry of the "practical man."

A SERVICE MEETING

Have you ever attended one of the Washington office Service Meetings? If not, we'll give you a blurry sort of peek. First of all, an hour before the meeting messengers go about gathering chairs and placing them in Colonel Greeley's office, for we insist on proper parking facilities. Forty-three highly intelligent Forest officers preempt chairs, with Colonel Greeley acting as chairman. For some minutes there is a dull roar - a compound of conversation between those who, though in the same building, have perhaps not seen each other since last meeting and air hammer from street pavers ~~from~~ outside. The chairman calls order. The roar of conversation ceases. That of the hammer continues. Reports from the Branches are called for. The chairman arises and opens a window or two to provide draft for the battery of pipes that are now going furiously. The most furious of the pipes belongs to Nick Carter, and it alternates between furioso and quiescence. Anon the owner lights it, puffs furiously and frowningly, and attempts to throw his match out the window. We have often wondered whether he is sure his match is out.

The Branch representatives report items of interest. The hard-boiled ones snap searching queries at them and soon much light is shed on dark topics. Mild dissension arises. Colonel Greeley, pulling calmly at his dudeen, takes a hand and with terse and complete comment gently orients the combatants, after which they again fly at it or subside as suits them.

"PR would like to report," pipes up Ballard, that they have got out sisteen printing jobs comprising one and one-half million copies in one month's time. This for American Forest Week." He seems proud.

"What about that Fire Bulletin we turned over to you eight months ago?" snaps a Philistine. Raucous laughter. (Wholly undeserved because PR actually gets out a whale of a lot of stuff). The editor leans over to "mooch" a load of tobacco from G. G. Anderson. G. G. protests, not at the loss of the tobacco, but at being thus roughly yanked back from Nirvana.

We hear of the work of our own chiefs before Mr. Stanfield's committee on "The Hill" and are imbued with renewed confidence in their leadership.

We get details of the hearing on the McNary-Woodruff Bill providing $40,000,000 for the acquisition of forest lands that will conserve the navigability of navigable rivers, and protect their watersheds. There is more discussion.

The meeting adjourns and the H. I. F. O's. return to their respective dens and hope for the return of their chairs.

This is a blurry sort of peek.

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YE EDITOR'S CORNER

In order to savy "Technicians and Others" in this issue you must have read or remembered Calkins' article in the February 1 issue. Here is presented a serious twist to this important topic and one that practical men ought to consider. There are other twists. We suggest a few. "Research - Our Engineering Department," "What Per cent of a Technical Education is used in General Practice?" "Practical or Technical Forestry - Which?" We hope you know that the viewpoints expressed in this article have been, and we hope will be challenged.

Our circulation is now more than 2600 weekly, and we would like to afford our subscribers the opportunity to listen in one such discussions, and so to learn.

* * *

Rachford told about Grazing objectives at the last Service Meeting. His talk is given in this issue. We hope to give you something on objectives from the other Branches if we can pry loose, from these busy men, enough time to write them, and we shouldn't wonder if something on individual District fire problems would be available soon.

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WASHINGTON NOTES

New Grazing Bill: After conferences extending over the past ten days between Mr. Bowden, counsel for the Committee on Public Lands, Colonel Greeley, Mr. Sherman, Mr. Rachford, and Mr. Scofield of the Bureau of Plant Industry, a new bill has been drafted to meet the objections made by the Forest Service. This new draft, in all probability, will be transmitted by the Secretary to the Senate Committee on Public Lands as embodying the provisions which he believes should be included in sound grazing legislation.

The draft as drawn will not, in Mr. Sherman's opinion, prevent us from handling grazing substantially as now. In some cases the things we now do because sound from the standpoint of public policy we will be required to do by law, and we will no longer be on the defensive.

As worded, the bill is designed to protect, develop and utilize the resources of the National Forests by providing an adequate system for grazing domestic animals thereon; but makes grazing subordinate to the primary purposes of timber production and watershed protection. The new draft provides for local boards of appeal to be under the Secretary, with provision for appeal from a decision of a board, carrying a little further our present Advisory Board idea. It gives the Secretary authority to make reductions for distribution, and unlimited authority to make reductions to stop damage to forage or range. The assignment of grazing privileges is left entirely in the hands of the Secretary to approve in whole or in part. In the matter of fees it elaborates what we have in our regulations, taking into consideration a number of factors, and specifies that they shall be moderate.

American Forest Week: Some idea of the magnitude of the 1926 American Forest Week can be gained from the fact that the Washington office has distributed 1,290,000 pieces of literature for this year's campaign. This figure includes the envelope stuffers, the bookmark, and the posters. Restricting the number to printed matter only the figure stands at 740,000 copies. Last year the Forest Service distributed 400,000 pieces, including 100,000 copies of the American Forest Week Committee booklet.

Assistant Forester Redington, fresh from the Golden State, expresses astonishment at the interest in forestry matters displayed in the eastern and southern regions of the country as evidenced by the unprecedented demand for Forest Service material this spring.

The list of printed matter making up the total of 740,000 copies distributed for American Forest Week follows:

Grow Trees	100,000	How N. F's Are Handled	25,000
Forestry Facts	100,000	Pines for Profit	100,000
Proclamation	150,000	Idle Land	25,000
Program	150,000	Timber Depletion	15,000
Arbor Day	75,000		

It would be very interesting if each District would add to this list all pieces of material, other than those named above, which it distributed for American Forest Week, thus arriving at a grand total for the entire Service.-M.H.

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DISTRICT 1 - NORTHERN DISTRICT

Field Study of Hour Control: For the past two seasons a systematic field study of hour control has been carried on by the protection forces in D-1. The method of study will commend itself to those who are suffering from brain fag but who as yet feel no weakness in the knees or back. It consists in making four-hour trips out from each guard station. On each trip the student carries a 35-pound fireman's pack, and at the end of each hour he marks his position on the map and on the ground. After four hours of travel he returns to headquarters, more or less ready for another trip. An average of nine or ten trips from each guard station is required.

At the end of the season the "dope" is plotted on a ½" map in the shape of hour contours, which show graphically just what part of each fireman's district can be reached in one, two, three or four hours. About 70 per cent of the area of the fire Forests in D-1 has been mapped in this manner. Many adjustments in the placing of men have already been made, and some new trails and telephone lines have been planned as a result of the work.

Bark Beetle Inspection: The District has just received an allotment of $17,000 for combating the bark beetle infestation on the Bitterroot and Beaverhead Forests. More than two townships of heavy lodgepole have already been laid waste by the mountain pine beetle. The infestation has gained such headway that its control is problematical. It is probably an extension of the one which a few years ago swept the Swan River and upper Blackfoot country, 100 miles to the northward. Eight thousand trees were treated last spring. The present allotment should provide for treating at least double that number this spring. Crews will be organized shortly to take up the work.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Cooperation in Tree Distribution: Two more States have been added to the list of those who wish to cooperate with the Federal Government in tree distribution under Section 4 of the Clarke-McNary Law. Agreements and budgets have just been submitted by the States of Kansas and Nebraska. The Kansas arrangement was signed by State Forester Albert Dickens, who is also the head of the Horticultural Department of the Kansas State Agricultural College.

Tree distribution in Nebraska will be in charge of the State Extension Service, since there is no State Forest Service. The fact that trees can be purchased at low rates and that the work will be in charge of an Extension Forester will help to stimulate tree planting in this State.

The commercial Nurserymen's Association has come out in favor of the distribution. It states that shelter belt trees form a very small part of its trade and offers to raise the common hardwoods at very low rates for the Extension Service, figuring that this will relieve it of sending out small packages of low priced trees which have brought very little returns.

Cooperative agreements were submitted by the three Lake States several months ago. Colorado has also signed an agreement under Section 4. South Dakota and Wyoming are making preparations for engaging in this activity. Agreements will undoubtedly be submitted by the last two States within several months.--F.R.J.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

Speaking of Yellow Pine Reproduction: Probably there has been nothing said on the subject for a year but then I have to start some way. On March 10, Ranger Welch and I, while cruising Sec. 1, T. 6 N., R. 5 E., N. M. P. M., encountered a patch of reproduction that if properly spaced would probably make a logging unit. This is fairly regular in shape and is 2 chains wide and 8 chains long and contains an average stand of 17 trees per square yard or 82,280 trees per acre. These are not of the foot-high variety but have an average height of 9 feet and a diameter of 1-3/4 inches four inches above ground. I regretted after leaving that we had not made a count of the rings to find what age they were. This is on an area that has had the small trees cut for ties and the others have apparently been blown down. Most of the Manzano force will know the location which is just southwest of the Ogier homestead.--L.H.L.

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Standard Mill, Sitgreaves, Burns: The sawmills of the Standard Lumber Company located near Pinedale on the Sitgreaves were recently destroyed by fire. The loss is estimated at $50,000. A valiant fight was put up by mill employees, assisted by additional men from the Cady Lumber Corporation at McNary, but they were unable to save the plant. A large quantity of lumber was, however, saved.

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Tie hack - Polyglot:

"Are you Hungary?"
"Yes Siam."
"Den Russia to the table and I'll Fiji."
"Well Sweden my coffee and Denmark my bill."

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Chance for an Argument: The following item which originally appeared in the "Six-Twenty-Six" and was later reprinted in the District 1 "Bulletin" has drawn critical fire from one of the local bunch. What do you think about it? Here is the article:

> "PR of the Wrong Brand -- A local film-producing company is showing its first creation in town. The title is "Hearts and Fists." The setting is in the logging woods. The pioneer lumberman died suddenly and his works were inherited by his son, who had spent his young life among the white lights in preference to the big sticks. The outfit soon became hay-wire. The son found himself helpless, In the midst of the muddle when a former college chum drove up to camp resplendent in spotless attire in a luxurious car:
>
> Son: "Hello! Old Chap! How comes you are here?"
> Chum: "Why, don't you know I'm now a graduate forester?"
> Son: "Is that so? Well, that's fine, I'm glad you came because
> I don't know anything about this lumber business either!"

Here's the argument. The above may be poor public relations as it is branded, but doesn't the fact that we note such things as this and view them with alarm make you think that we as an organization must be getting thin skinned and touchy in our old age? It looks to me as though we were losing our sense of humor and becoming efficient at the expense of good honest humanness. Look at the agricultural colleges. They have had jabs like this and you have laughed at them yourself. Consider plumbers and mothers-in-law. Both of them continue to do business at the old stand in spite of the unfavorable PR which they receive. It seems to me, when a bunch can't take a joke and have to stand up and sputter and grow red in the face about it, that something more serious than the wrong brand of a PR is involved.

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DISTRICT 5 - CALIFORNIA DISTRICT

The World's Biggest Lumber Port: The city of Los Angeles, California, leads the United States and perhaps the entire world in the quantity of lumber received and handled by water. Approximately 1,280,000,000 board feet of lumber valued at $43,500,000 was handled at Los Angeles harbor during 1925. This represents about 80 per cent of the water borne movement of forest products to southern California ports during the year. The city which ranks next to Los Angeles is London, England, receiving about 1,245,000,000, and third is Yokohama, Japan, with 1,000,000,000 board feet. It is believed that New York City handles more lumber than any other city of the world if both railroad and water shipments are taken into account. These estimates have been given by the Lumber Division of the U. S. Department of Commerce.

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Fire Fines Will Aid State Forestry: The State Forester has recently received a decision from the Attorney General which is of considerable interest to fire protection organizations in the State. Heretofore, fines collected for violation of State forest fire laws have reverted to counties and the State. Under the decision of the Attorney General these funds are now to be turned into the credit of the State Board of Forestry to be used in furthering forest protection and forestry. This means that collections of fines made through our efforts in National Forests because of infractions of State fire laws will give added power to the State Forester in furthering the cause of fire prevention.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Keeping Costs on the Rainier: It has been said that we should think more in terms of cost keeping. The new N. P. Coop. report will tend to extend those thoughts throughout the night in our dreams. But aside from that, Ranger Kirkpatrick has followed the suggestion. Recently he installed a power-driven carborundum and grindstone. The 2 h. p. gas engine was purchased for pumping when sinking the foundation of the Cispus Suspension Bridge. He ground axes that were in bad shape, thick, dubbed-off by files, had big nicks and broken corners. The cost per ax for reshaping was: wear on grindstone per whole, negligible; wear on carborundum wheel, per ax, $0.08; engine oil (1/4 gal.) per ax, $.002; gasoline (4 gal.) per ax, $.007; labor ($4 per day per man) per ax, $.30; total cost, $0.389.

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Next: Excerpt from a Snoqualmie Ranger's diary: "Put cabin in shape for arrival of District Officers." Later excerpt from diary: "Cleaned cabin after District Officers left."

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Weisendanger School Visitor: Albert Weisendanger, Forest Ranger in the Mt. Hood National Forest, paid his annual visit to Jefferson last Monday and was greeted with loud applause by the assembled students, who always look forward to his coming. Mr. Weisendanger asked for the cooperation of all in the prevention of forest fires, stressing the slogan "Put out your camp fire." In addition he had a new and useful piece of fire fighting apparatus, the operation of which he explained to the students. He also showed to the students a small, compact cooking kit with which a meal for four could be prepared. Foreseeing the expectation of the students, Mr. Weisendanger produced his harmonica and played "Moonlight and Roses" to the great delight of the audience.--Oregon Journal.

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DISTRICT 7 - EASTERN DISTRICT

Why Not Call our Trees by Their Right Names? In a management plan recently viewed by this office, Virginia pine (P. Virginiana) was called "scrub pine," "Virginia scrub pine" and "Black Pine"; basswood was called "lynn"; maple and gum were listed without distinguishing species. In a timber estimate from another Forest, pond pine (P. rigida serotina) was called "black pine" and sand pine (P. clausa) was called "spruce pine." Butternut is often called "white walnut"; yellow poplar is commonly spoken of as "tulip poplar"; and the oaks -- but it would take too long to list all the nick-names of the long-suffering oaks!!

These are just a few examples of the liberties we take with the common names of our trees. It is not so much a matter of wonder, considering the wealth of tree species, that inaccuracies and purely local names creep into our speech, but there is little excuse for carelessness in our official writings. The very fact that we have so many species makes accuracy all the more important. It ought to be a matter of professional pride to call each tree by its right name. A new "check list" will be out before long. In the meantime, a supplement entitled "Commercially Important Trees of the United States," showing all the latest in official names, was issued December 15, 1924. Better get it out and keep it handy for a while, and the next time a tree is mentioned in a letter or report, be sure to use the name accepted by the profession.--R.M.E.

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Lest We Forget: E. T. Allen aptly says: "Our problem is not a fire hunt, but a man hunt; before the fire, if possible, but in no case abandoned until he is eliminated. Not fire, but the owner of the hand that lights it, is the public's enemy. In his heart, and that of his wife and neighbor, of the officer of the law and the judge on the bench, and of editor, legislator and man on the street, there must be the knowledge that this hand has been set against society as surely as that of the pervert, the killer, and the thief.

"No excuse alters this fact. He may plead thoughtlessness instead of depravity, but this does not compensate his victims. In the degree that they are more numerous, that his carelessness strikes more homes, it is a greater crime. As a rule it is more than carelessness. It is a violation of the law."--E.W.K.

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DISTRICT 8 - ALASKA DISTRICT

Internal Revenue: A jollification party was held by the Tongass force on March 6 at Ketchikan. Several of the field force whose duties keep them away from Ketchikan most of the time were in on "boat maintenance" and added to the size and good time of the crowd. District Forester Flory was also present and got away with his share of the bill of fare which consisted of several hogsheads of corn beef and cabbage, apple pie mit whipped cream, besides coffee and other dishes of a palatable nature. The ladies and kiddies were there, too, and when the gong sounded at 6.00 p. m. 33 Jiggs and Maggies turned to. Tables were set in the Forest Service Wanagan, a large floating camp moored at the Marine Station a mile across the Channel from Ketchikan.

After the knives and forks were crossed the floors were cleared and interesting games and dancing indulged in until a late hour, when all set sail for home. The evening was voted a huge success.

This party, it is hoped, marks the revival of a get-together plan initiated by the District Forester in 1920. We have a large official family at Ketchikan. They need and appreciate the opportunity to get together on parties and picnics; away from the click of typewriters and sewing machines, the ring of hammers, the racket and clang of machinery and the worries of official and domestic life. It is good P.R. work. It will pay in good fellowship and good health. The Service will derive a revenue; not in cold cash, but in good will toward the Service and between those who are thrown together by the living and working conditions peculiar to Alaska.--J.N.W.

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Service Bulletin
U. S. FOREST SERVICE
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OBJECTIVES AND PLANS OF LANDS

By L. F. Kneipp, Washington

The general objective of Lands is to secure such adjustment of boundaries, titles, and forms of special use as to promote the maximum efficiency of the National Forests in the production of timber, protection of streamflow, and supply of raw materials for industrial and economic growth, under conditions which will bring about the most effective forms of administration.

One of the biggest problems before Lands is to bring the Forest boundaries into better relationship with natural units of forest management. There is a growing feeling in the West, particularly in Districts 1 and 5, that this should not be accomplished by any large increase in gross area. One reason for this is that we now have, according to our estimates, about 62 per cent of the timber land of all the western States in the National Forests, a proportion higher than that which in theory should be in public ownership.

The boundary objectives are therefore to increase the proportion of true timber growing land within the western Forests rather than to increase their gross area. There are various ways in which this can be done, the first of which is by the further addition of such public lands as clearly are valuable for timber production and should be managed with that end in view, an area roughly estimated as amounting to about four million acres. We now have pending reports for additions to 24 National Forests, involving an area of about 1,900,000 acres, of which over one million acres are classified as bearing commercial timber. The first step in the treatment of the remaining unreserved public lands, therefore, is to add to the Forests lands covered by reports, and then determine what other lands should be added. The second step is to include within logical boundaries desirable areas of privately-owned lands whose acquisition may be possible through the general exchange law, by giving in exchange lands less valuable for timber production or stumpage. A third step we are working toward is the addition of revested lands, which in the case of the O&C lands amounts to $1\frac{1}{2}$ million acres. And finally we probably will come to studying the possibilities of large exchanges of both land and stumpage for other large areas of land and stumpage.

In our classification work we have no objective other than to correct errors in classification. Classification work is practically done now, except in Alaska. The only work remaining is the recalling of lists, some of which go back as far as 1911. The function of other Branches in this connection is important in that mistakes in the patenting of these lists complicate forest and grazing management and all other forms of use. The Branches should report on erroneous listings as far as they can. A single erroneous list may tie up a timber sale, or hamper the use of grazing land, or interfere in other ways with forest administration; and every Branch should aid in the cleaning up of this work.

In land exchanges the principal objective is to increase the timber growing capacity of the National Forests; to get a larger percentage of true timber producing land under National Forest administration. Land exchange carried to a logical conclusion has the advantage of simplifying plans of management and administration and may promote better timber and grazing management or better fire protection, and each Branch in its field of work should determine how far exchange authority is being employed in the field to solve problems created by antagonistic holdings.

In recreation work the primary purpose is not to stimulate recreation use but to really eliminate the bad conditions of sanitation and serious fire risk that occur through unguided recreation use. Whatever our original conception of that work may have been, it is generally accepted now that these are the real requirements of the situation. The other Branches are very directly involved in recreation use. If not properly controlled or provided for, it will greatly increase the fire risk. General resentment on the part of the recreation-seeking public against the utilization of popular or scenically important areas creates a strong possibility that the growth of recreation will be a deterrent to timber and grazing operations. Therefore Management and Grazing are concerned in having recreation so handled as not to set up obstacles to the primary purposes of the Forests. The establishment of summer home communities may also have some effect, although that receives more study than casual recreation use and is more carefully considered in relation to timber and grazing. There is a wide difference of opinion on the part of individuals as to the place of recreation in forest management. How these wide extremes can be correlated, I do not know. As to objectives, I think that of placing protection above recreation promotion has been a matter of slow but certain growth in the field and everywhere. As the true proportions of the situation develop, we begin to realize that the protection feature must be handled not to the absolute elimination of promotion of recreation use, but with the latter properly subordinated. As to priorities, I think that more or less a local situation; and recreation can not be given a general place in priorities.

In the matter of special uses, one objective is to promote all reasonable uses of the lands which are in effect a means of realizing their highest value; a second, to permit such uses as are necessary in connection with the primary uses such as timber and grazing; and a third, to check special uses so as not to retard the proper utilization and management of the Forest. Special uses are not allowed which will restrict logging or grazing or water power development; and on the other hand, such uses are allowed as are fully consistent with the general policies of Forest administration. Special use policies are of extreme importance to the other Branches, which should not hesitate to make their needs and views known and to see that Lands does not allow unwise special use privileges.

The Claims situation is pretty well cleared up, practically all homestead claims having gone to patent or been cancelled. The only serious situation now is in connection with fraudulent mining claims, which is acute in southern California and is being revived in several other regions. Recently the Secretaries of the Interior and Agriculture have submitted a joint letter to the Senate Committee on Public Lands picturing the bad conditions which prevail and suggesting remedial legislation. This move has provoked the opposition of the mining industry; and it will be hard to sustain the case before Congress because of the strong adverse sentiment. The only way we can do it is to bring to bear the full strength of all the Branches and cite the maximum number of specific cases where either fraudulent or bona fide claims are defeating the purposes for which the National Forests were created. The fact that the Department of the Interior has joined forces with Agriculture in this matter is a big step; but much work and several years of effort are ahead before we get anywhere.

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THE VALUE OF EDUCATION

By Paul G. Redington

For the first time, to our knowledge, a move has been started to accurately determine the concrete results of an educational effort designed to reduce the number of man-caused fires.

The plan as outlined in a circular issued by the Massachusetts Forestry Association follows:

"Purpose of Experiment - To determine the value of public education and intensive patrol in the prevention of forest fires.

"What is it? - It is a concerted effort to prove that forest fires can be prevented. It is a cooperative plan in which the United States Forest Service (using Clarke-McNary funds), the Massachusetts Department of Conservation, the Massachusetts Forestry Association, the Forest Wardens, organizations and residents of the towns of Barnstable, Bourne, Falmouth, Mashpee, Sandwich and Yarmouth on Cape Cod will each take a part. It is limited to these towns because they are practically surrounded by water which eliminates the danger of fires from adjoining towns; because the nature of the soil, the type of forest growth and the frequent high winds make this area one of the highest fire hazards in the Eastern States; and because the funds available for the experiment are not sufficient to cover a larger area. The work will cover a period of three years in order to give the plan a fair test."

Ten reasons why Forest Fire Prevention on Cape Cod will pay are also listed in the circular, reasons which have a strong appeal to the self-interest of the town authorities, farmers, recreationists and real estate men. I am sure that the progress of the experiment will be watched with interest by all foresters.

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EVOLUTION

By James J. Montague

A calf giraffe, long ages gone, Beneath a palm tree stood, And ate the leaves that grew thereon, And found them rather good. But in the tropics, where at ease The brute took his repast, The palms, as well as other trees, Spring up extremely fast. And soon the very lowest frond Was raised to such a height That it was full two feet beyond His radius of bite. Did he give up in sore disgust, As one of little zeal? Not he! His neck he upward thrust Until he got his meal. And as the food-dispensing tree Was lifted bit by bit, his multiplying vertebrae Kept equal pace with it. His form became ridiculous - All neck and legs and feet, But he cared not a single cuss, As long as he could eat. And now, dear little boys and girls, Who round about us throng. If you look close, you'll find rare pearls Of wisdom in this song. Let adolescence realize, We earnestly beseech, That there is never any prize Beyond ambition's reach. If you will only try, you'll find That you will have the laugh On all the creatures of your kind, As did the calf giraffe.

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New Hampshire has 49 town forests comprising 10,572 acres upon which have been planted more than 1,000,000 trees. Some of these forests also carry timber of considerable value. The oldest of these forests is located in the town of Newington. It contains 112 acres and was established in 1710. From this it will be seen that the White Mountain National Forest must be a great great great (?) grandchild of the original town forest.

YE EDITOR'S CORNER

Dr. Carl Hartley has informed us that he can not accept all of the credit given him in the SERVICE BULLETIN of March 15 in regard to the aluminum sulphate treatment. He says that Dr. Spaulding was unquestionably the originator of the use of sulphuric acid as a soil treatment; that the aluminum sulphate treatment is not an independent thing, but an outgrowth of the sulphuric acid treatment. Although Dr. Hartley may not have been the originator of this treatment he is the man who put it on the practical basis for actual use at nurseries.

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Colonel Peck, Heaven's choicest blessings be upon him, has sent us an article on "Bond Issues for Forest Planting." It is the third from a District Forester which we have been able to secure for you. The first two you may remember were stolen, which indicates the length to which the editor is willing to go for his subscribers. The Colonel tacked a little note on his article which read as follows: "Here is one you won't have to steal." We hope the other D. F's will become equally concerned about editorial ethics.

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WASHINGTON NOTES

"The Combat" a new motion picture with a forest background and a good forest fire is now released. It will be shown at the following places on the dates indicated:

Missoula, Mont., May 5, 6, 7, 8.
Denver, Colo., May 7, 8.
Ogden, Utah, May 5, 6, 7, 8.
Winnemucca, Nevada, May 23.
Mountain View, Calif., Apr. 16-17.
Petaluma, Calif., May 1.
Benicia, Calif., May 1.
Sanger, Calif., May 21-22.
Woodland, Calif., May 8.
Portola, Calif., June 3, 4.
Hilt, Calif., Aug. 5.
Greenville, Calif., Aug. 11.
Weimer, Calif., Aug. 13.
Laurel, Md., Apr. 24.
Pulaski, Va., May 5.
Roanoke, Va., July 1.

The Universal Film Company are going to advise us the Albuquerque date later. Better call your local theater handling Universal films and find out about it.

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Retirement: A liberalized retirement bill has at last been favorably reported out by the House Committee on the Civil Service. It provides for calculating the annuity by multiplying the average annual basic salary for the last ten years, with $1,600 as the maximum, by the number of years of service and dividing by 40, the maximum annuity being $1,200. A feature of the bill is that the deduction for the retirement fund is raised from 2½ to 4 per cent. For most of us this means a larger enforced savings bank account, with Uncle Sam as the banker. With respect to retirement ages the committee's report contains the following statements:-

"The ages for automatic superannuation retirement in existing law remain unchanged, but the classes to which the respective retirement ages apply are amended as follows: To the classes of postal employees and mechanics who retire at 65 years of age is added laborers, and to the class of railway postal clerks who retire at 60 years is added those employees engaged in pursuits whose occupation is hazardous or requires great physical effort, or which necessitates exposure to extreme heat or cold."

"The bill contains an entirely new provision for voluntary retirement at the option of the employee after at least 30 years of service. The group that is automatically retired at 70 years may exercise this option at or after attaining the age of 65 years, the group automatically retired at 65 years may exercise the option at or after attaining the age of 62 years, and the group automatically retired at 62 years may exercise the option at or after 60 years."

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DISTRICT 1 - NORTHERN DISTRICT

Fire Control is High: Fire control was shown to have cost one North Idaho company $74,000 during the first year of the new forestry law, in the statement made by the president of the company. This amounts to about 38 cents an acre on the company holdings. Costs were approximately as follows: $24,000 assessments to associations; $24,000 logging camp patrol and lumbering fires; $24,000 slash disposal (chiefly piling and burning). This cost is considerably above the average for past seasons, but is by no means the highest. Damage during 1925 was negligible; whereas, during 1914, the worst of recent years for this company, 62 million feet of timber and a great deal of other property valued altogether at several hundred thousand dollars were destroyed, and something like $70,000 was spent for fire suppression alone.

Company officials hope that the $24,000 put into better slash disposal will result in eliminating much of the danger of such disastrous fires as this. Accurate cost records were kept on the slash disposal operation.

At one camp piling and burning cost $1.14 per M. Forced or progressive burning was done for 62 cents. Some spot and compartment burning was tried. The expense of slash disposal charged against the total cut amounts to only about 20 or 25 cents per thousand. Charged against the total area protected, it comes to 13 cents an acre.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Esprit de Corps: A former employee of the Forest Service once wrote "That old hag, Esprit de corps, is dead." I didn't and don't believe it. In some quarters, possibly, it has declined, but esprit de corps is essentially the spirit of the whole personnel. If disheartened stragglers drop out there are always recruits filled with fresh enthusiasm, ready to carry on. Maybe the spirit is different; maybe our attempts to improve efficiency have subtracted something of the zest with which the old-timers tackled their work; maybe we chafe a little under so many objectives, and priorities, and schedules. But I wonder if those of us who wag our heads sadly are not exercising that very human tendency to sigh for the "good old days." If so, we are wasting our time. There never was a better day than today! Tomorrow should be just as good. We do more things, do them better and in less time, than did the old-timers. We probably are just as willing to waive personal comfort and ease as they. We have just as many men who work day and night on a fire and who never find time for all their annual leave.

We have grown older. Our leaders are no longer youths. Some of us, not leaders, but old in the Service, have substituted sober thought for enthusiasm. Only youth follows blindly. Maturity obeys and retains its own opinion. It can be led better than it can be driven. So if we find that our philosophy has changed a bit, let's not be too quick to assume that the change is for the worse. Esprit de corps isn't dead; it isn't even sick.--C.A.H.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Bugs: The Black Hills beetle epidemic in yellow pine on the Kaibab is apparently about at an end; at least the examination made last fall under the direction of F. P. Keen of the Bureau of Entomology shows that all except one small area has gone back to what is considered an endemic condition (less than 100 infested trees per section). But let it be said here that I am not at all sure that because less than 100 infested trees per section is considered endemic on the Kaibab that the same number in other places and particularly with other beetles or other tree species would be considered endemic. Then, too, you know, it all depends on whether the said number of infested trees per section occur in groups or are scattered singly over the section. As I understand it, any time you find three or more infested trees together you'd better look out, and the more you find together the more you'd better stop, look, and listen; or rather, get busy and do something.

Why has the Kaibab infestation suddenly gone from an epidemic to an endemic (normal) condition? How should I know? If we just knew that we'd be in a good way toward solving our insect problem. The Bureau of Entomology are studying this and we hope that they will soon determine the governing factors. Not being an entomologist and therefore not responsible for an entomological opinion, I feel safe in guessing that the decline in the infestation is due to a combination of causes. Among them are certainly (1) predators, (2) parasites, and (3) man. The order of importance? You guess. Among other factors are probably (1) weather, (2) fungi. Maybe climatic conditions are the most important of all, but we don't know yet what effect climatic conditions have.

I am convinced of one thing, however, and that is that the "man" factor or cause can not wholly be ignored. Surely the killing of the billions of beetles in the treatment of 45,093 trees had some effect - probably in hastening the decline and certainly in saving a lot of timber that the bugs we killed would otherwise have killed.

Control operations were carried on by the Bureau of Entomology, Park Service, and Forest Service during the years 1922, 1923, 1924, and 1925. During that time we treated 45,093 trees containing about 16 million feet B.M. We peeled over 7 million square feet of bark. We spent over $60,000.

And the little black devils killed 150 million feet of western yellow pine!

This is approximately 11 per cent of the total stand of yellow pine on the Kaibab plateau. The infestation existed in epidemic form for a period of 6 or 7 years. I say 6 or 7 because it started in 1919 or 1920 and am assuming that it is now over - I may be wrong at either end - maybe it will "bust out" again.--C.B.M.

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DISTRICT 5 - CALIFORNIA DISTRICT

The Tractors are Marching Onward: Topography on the Stanislaus Forest is, on the whole, rather rough, and logging operators on the Forest have oftentimes declared that tractor logging was totally unsuited to their conditions. They laughed at the idea when we suggested it, and we suggested it often. Their timber was too big, tractors couldn't handle the huge sugar pine butts, the country was too rocky and too steep, and tractors and donkeys couldn't be mixed in the same camp. "Sure, tractors work fine up north in level country and in medium sized timber, but on our operations? Ha! Ha! You Forest Service guys are loony. You're not practical."

And then, all of a sudden, three "caterpillars" appeared at a camp of the largest operator on the Forest, an operator who has long been an exponent of the high lead, and who also has the largest timber on the Forest. The "cats" worked so nicely that we understand a half dozen more have been ordered. Now watch all the operators hereabouts change their attitudes. The "Ha!" will be reversed to an "Ah!"

Verily, he who laughs last can laugh loudest.--M.R.B.

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Tree Breeding Station to be Established at Placerville: The Eddy Tree Breeding Institute, under the direction of Lloyd Austin, has chosen Placerville as the site for its new experiment station. The particular aim of the research work will be to develop improved strains of trees for use in private reforestation - trees that will grow much faster than those now being used. An attempt will also be made to improve the quality of lumber produced by second growth trees. The institute, which is the only station of its kind in the world, is being financed by James G. Eddy, prominent lumberman of the Pacific Coast.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

He May Be Right: Ranger Charlie Congleton of the Ochoco says: "At the Ranger Meeting at Bend last spring, Mr. Osborne stated that we had days of low humidity in winter (even when it was very cold) same as we have in summer. I didn't say anything but I thought Maybe.

"On December 17, I was on top of Wolf Mt., snow about a foot deep and cold wind blowing; snow drifting, and of course I wanted a fire. I gathered a load of moss and dead limbs off fir trees and piled it down on top of dry fir windfall, touched a match to it and away she went just like August 15. It looked like I was about to have a crown fire in heavy fir timber. I wished for a shovel so I could throw snow on it to cool it down. Boys, don't argue with the boss - he may be right."

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To Make Winkle Bar Famous! The Forest Service has received an application from Zane Grey for a summer home and study, to be located on Winkle Bar on Rogue River on the Siskiyou. Winkle Bar, like many others along the Rogue, has been held for many years as a mining claim. It has shifted from one claimant to another until it is difficult to trace the chain of alleged ownership. At one time, about 1910, it was the basis for a stock-promotion scheme, in which a few thousand dollars passed from the hands of a few people, some of them intimate friends, who visioned nuggets being taken from the sand and gravel in bushel baskets.

The claim, or piece of ground, has never been worked except in the early days, but has been under color of a claim for over 20 years. It is the general opinion of mining men that the valuable deposits were worked out long ago. If that fact is established and the Forest Service can issue a permit, Zane Grey will be located on Rogue River, near the center of the Siskiyou Forest, for at least a portion of his time. He stated that he wanted a study where he would not be run over by automobiles. He has found the right place.--A.H.W.

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DISTRICT 7 - EASTERN DISTRICT

Fire Prevention Preparedness on the Pisgah: "As a step in preparedness against a repetition of the outbreak of incendiarism that occurred on Bent Creek in April 1925, we have gone to the City Fathers of Asheville for assistance." So writes Supervisor Mattoon of the Pisgah, "By the use of a little 'pushing' we are able to incorporate in the 'Presuppression' chapter of the Fire Plan the following items:

Organized Man Power

60 organized Boy Scouts (16 to 18 years of age) to be released from school on orders of the Mayor
5 to 10 policemen and 5 to 10 firemen
20-25 employees of the Public Works Department

Transportation

Seven-passenger touring cars of the Fire Chief and Asst. Chief
Police Department - 2 Dodge trucks
Public Works Department - 10 trucks

Miscellaneous

Commissary and First Aid Service of local Red Cross
One pair bloodhounds

These agencies have all been notified and will respond as needed, upon call of the Mayor."

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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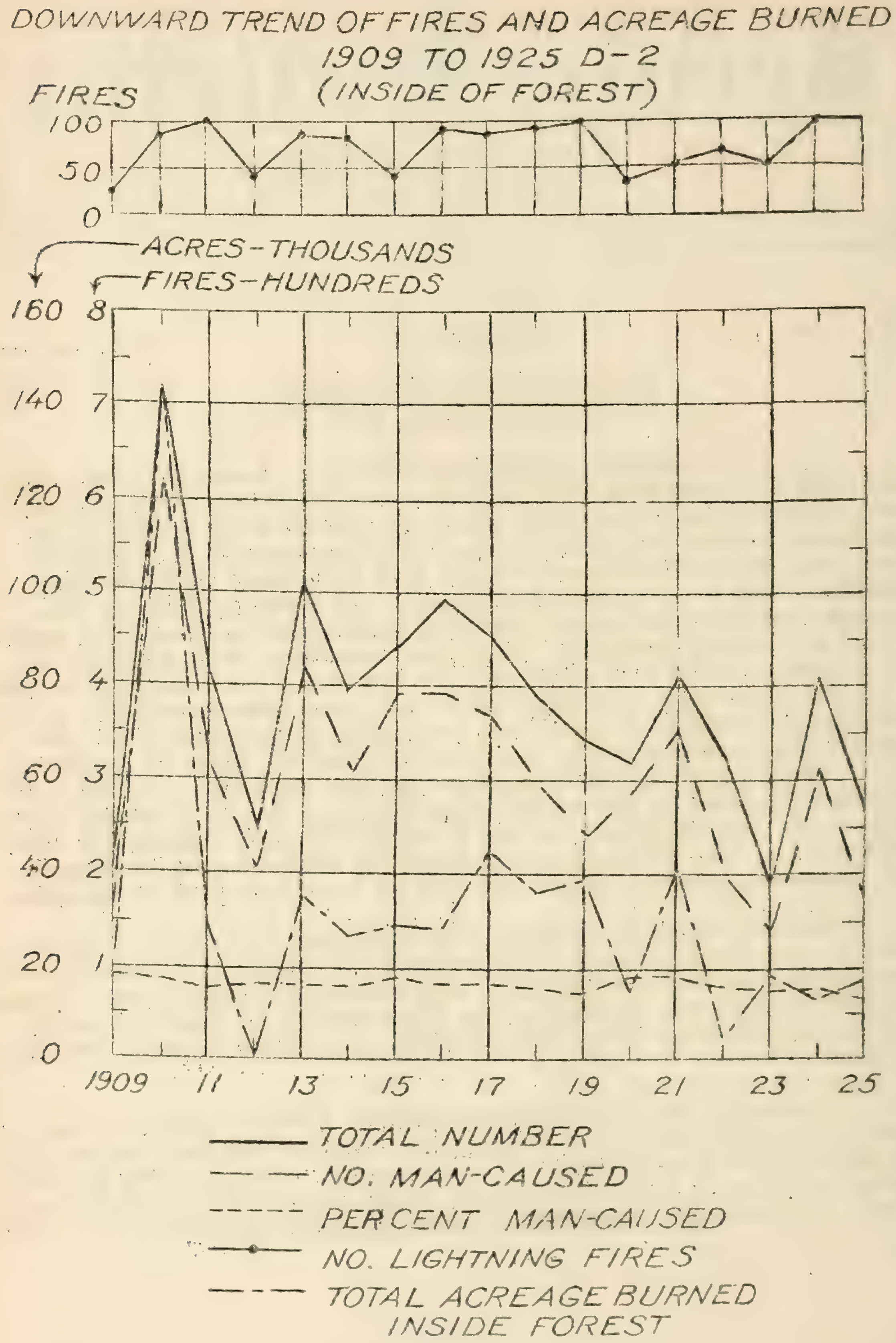
REDUCTION OF MAN-CAUSED FIRES

By John McLaren, D-2

The first concrete, fundamental fact to be recognized and reckoned with in considering this subject is that there must be loyal and enthusiastic support from local people if success is to be hoped for. The Forest Service has employed, in varying numbers for different regions, men who are impressed with the fact that their first and most important duty is to prevent fire damage. If a man is found in the organization who lacks proper interest, enthusiasm, or energy, he must be and is promptly replaced. There has, therefore, been developed in the Service an efficient group of field men who do not hesitate, at personal sacrifice when necessary, to fulfill their responsibilities in the best possible manner. Thus a good background is established for the serious consideration of the fire control problem. There is in place in the field a fine skeleton organization with which to work, but a lot of emphasis should be put on that word skeleton; for if we assume that we have the facilities and the men to handle the fire control job independently, we are, in my judgment, doomed to disheartening handicaps and discouragement and, if not failure, at least only partial success.

Success cannot be attained with any amount of money or with a greatly expanded paid force if we undertake to shoulder the entire responsibility and try to carry the whole burden on our own backs. Unless we have the approval and help of the local public, we cannot expect to make satisfactory progress, and unlimited appropriations would not bring it about.

Obviously, then, an important function of the skeleton organization, aside from setting the example in prevention and suppression work, is to "sell" the local public. The educational feature of the problem is one of the most important that the local Forest officer has to deal with. I do not mean educational work in the ordinary acceptance of the term, covered by illustrated lectures, newspaper articles, incidental talks to Boy Scouts, Y.M.C.A., civic bodies and similar organizations,etc.



These are good, immeasurably so, and no opportunity should be passed to take advantage of every occasion to further the work in this way. What I have in mind is the work of individual Forest officers through personal contact with the settler, the stockman, and the prospector, whether they be highly educated and polished or of the more humble, hill-billy type. There will be as many methods of approach and as many different ways of accomplishing desired results as there are individuals to deal with. Here is work to do that will tax to the utmost the ingenuity of every man who undertakes it, and success in any event will not come overnight. There will be failures at the first or second attempt, and maybe for a long period of time, but the man who really means to put it over will not take advantage of an easy alibi by pointing out that the particular individual is an undesirable citizen, lacks intelligence, and is an all-round worthless human being. He will square his shoulders and remark "There is a man who, regardless of mental incapacity, physical appearance, or social contacts and interests, is worth while having on our side," and that Forest officer will work on the case until he has sold his prospect. In the meantime, he will tell you that his failure to have put it over is his personal responsibility - the other fellow is all right, there is good in him somewhere; and that Forest officer is going to continue to analyze and study the case until he does put it across.

My point is, start right at home. When you have the home folks with you 100 per cent, you will see a change in the man-caused fire status. The home folks will spread fire propaganda in ever-widening circles, and with the Forest officers and home folks banded together and a massed movement extending over all the Forests in a region, the result is inevitable.

It was suggested that in considering this subject the writer touch on specific measures and methods. There is not room in this article to go more into detail, and, since I have an inclination to go into the subject of the reduction of railroad fires, I think I shall a little later make another attempt if the editor lets this one pass. I have a feeling that the Rangers and Supervisors of D-2 are going to let loose a barrage of articles on this subject, since it is opened for popular discussion and they can give some mighty "specific" illustrations that apply aptly if they will.

It is a tribute to the field men that man-caused fires have been decreasing generally for the past several years, as indicated by the chart on the preceding page.

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A NINE-YEAR-OLD QUADRAT

By Milo H. Deming, Fishlake

During the summer of 1916, while conducting an experimental study of the sheep allotments in Sheep Valley on the Fishlake National Forest, Grazing Assistant Bryant S. Martineau established two fenced enclosures and charted four quadrats.

Sheep Valley is a portion of the common use summer range whose past history is a story of overgrazing. Sheep use has been very heavy while cattle use has been somewhat restricted on account of the presence of tall larkspur. The valley lies at an elevation of 9,200 feet and is chiefly aspen timber type and open grassland. The principal plant species growing in the aspen type are fescue (Festuca viridula) and wild pea (Hedysarum suffurescens.) Associated with these are large mountain brome grass, porcupine grass, bluegrass, yarrow and small annual weeds. The open grass type is composed of fescues, violet wheat grass, and porcupine grass on the drier portions, with redtop, timothy and bluegrass on the more moist situations. Sneezeweed, clover, yarrow, aster, cinquefoil and dandelion are the principal weed species and there is a scattering amount of high-land sage (Artemisia cana) in both types.

One of the enclosures established by Martineau is in the aspen type and the other on open grassland, each with a quadrat inside of it and a check quadrat on a comparable area on the outside.

In July 1925 an attempt was made to rechart these quadrats for the purpose of determining what had happened in the nine years since their establishment. Unfortunately, only one quadrat was sufficiently well marked to be absolutely relocated and recharted. This quadrat was in the open grassland type, outside of the enclosure and at the present time is subject to sheep grazing from June 25 to August 20 and to cattle grazing from July 1 to September 25.

A comparison of the 1916 and 1925 chart records reveals some interesting developments.

The quadrat as a whole has made an increase in the area occupied by plant specimens from 221.33 square inches in 1916 to 466.40 square inches in 1925, or 111 per cent. Good forage species have increased from 152.38 square inches to 312.08 square inches or 105 per cent and poor forage species have increased from 68.95 square inches to 154.92 square inches or 110 per cent. Violet, hawkweed, and timothy have disappeared, while violet wheat grass, fescue, cinquefoil, silene, lambsquarter, hair grass, gentian, knotweed and androsace have appeared on the area since the original charting. Probably the most significant change is the appearance on the area of 50.98 square inches of wheat grass and 30.39 square inches of fescue which were not present in 1916. Aster has also made a remarkable increase of 56.03 square inches.

While it is true that poor forage species have increased a greater percentage than good forage species, yet the appearance of the higher class of forage, notably fescue and wheat grass, is taken to indicate a marked change for the better.

Forage on the protected area inside the near-by enclosure appeared to be very little different from that on the grazed range outside except that the plants showed a more vigorous growth.

It is realized that any conclusions drawn from such slight evidence as a single quadrat could show would be at best highly speculative, but it is a strengthening addition to the beliefs of local officers that our ranges are improving. Our one regret is that we do not have enough quadrats scattered over our ranges to present indisputable evidence of what is happening on them.

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YE EDITOR'S CORNER

We are printing as the first article on local fire problems one from "Mac" McLaren, who is Chief of the Fire Department in District 2. It seems to us that discussion in the SERVICE BULLETIN of ways and means of preventing man-caused fires must of necessity prove highly interesting. The BULLETIN should be a place where you can get ideas - and give them. What you see in it is not always to be considered official. In fact, what we want to do is present the various shades of thought current among the 2,600, not necessarily to give out official conclusions. In doing this mistakes will be made to be sure, but what of that? Get your contribution ready.

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WASHINGTON NOTES

Those Tax Studies: The personnel of the new organization for Tax Studies so far as it has been completed is as follows: Dr. Fred R. Fairchild, Professor of Economics, Yale University, Economist in Charge; Professor H. H. Chapman, Yale; R. Clifford Hall, formerly in Forest Acquisition, later in Timber Section of Internal Revenue Service; Louis R. Murphy, now in Economic Investigations, Forest Service. This group will be augmented later.

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New Name for the Arkansas: At the last Service Meeting it was proposed to change the name of the Arkansas Forest to the Ouachita (pronounce it yourself) on the grounds that there is apt to be confusion, for example, between the Arkansas National Forest and the National Forests of Arkansas, of which there are two. To get the sentiment, Col. Greeley called for a vote of the meeting and Ouachita won. Fifteen to fourteen.

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Another State has Joined the sisterhood of forestry-minded commonwealths. This time it is Mississippi, making 33 in all. When it was announced at the Service Meeting, Mr. Sherman asked "Pete" what he would do when all 48 were in the fold, and it seems that Peters has designs on Porto Rico, Alaska, the Philippines - in fact, as it impressed us, any area where trees will grow.

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Demosthenes! Attend Us: All persons in the Washington office who are even slightly suspected of possessing oratorical ability are being drafted for use during American Forest Week. We feel we must keep up with the field.

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FOREST PRODUCTS LABORATORY

The Next Short Courses in the Gluing of Wood and the Kiln Drying of Lumber will be given June 7 to 12 and June 14 to 25, respectively, at the Laboratory. The schedule is arranged to enable those who wish to do so to take both courses on one trip to the Laboratory. Several double enrollments have already been made for the June course.

The gluing course is for executives, foremen, and others from shops or factories where glued wood products are manufactured and for those making or selecting glue and gluing equipment. The characteristics of different glues and methods of gluing the common woods are points covered in the gluing course. Demonstrations are given in mixing different kinds of glues and in making and testing glued joints.

The kiln drying course is given to executives, foremen, and kiln operators engaged in the artificial seasoning of wood. The instruction covers the design, construction, and equipment of the types of kilns used for drying various commercial species, characteristics of different species as related to proper drying, drying defects and how to prevent them, and comparison of the effects of kiln drying and air seasoning. Lumber green from the saw will be dried in the demonstration kiln run which is a feature of the course.

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DISTRICT 1 - NORTHERN DISTRICT

Mining Claims Cancelled: On March 17 a decision by the Commissioner of the General Land Office held for cancellation seven of a group of 12 placer mining claims on the Nezperce National Forest containing about 135 acres and having an estimated timber stand of almost 2,000,000 feet, valued at over $3,000. Five of the claims were favorably recommended for patent and were not protested by the Forest Service. Considerable gold has been taken from two large pits which open up gravel in an ancient river channel at opposite ends of the group. It was the claimant's theory that the channel also traverses the other seven claims. The only work upon these claims was in surface material which failed to show sufficient values to justify mining operations. The Mineral Examiner of the Forest Service contended that it is purely a matter of speculation whether the gravel channel underlies the surface material which has an average depth of about 150 feet.

The thing that is noteworthy about this case is that both sides submitted expert testimony on the geology of the area. The apparently sounder views expressed by one of the Government witnesses seemingly greatly influenced the Commissioner, who based his conclusions wholly on the lack of mineral showing and did not give any weight to the element of lack of good faith as indicated by the timber values at stake.

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Montana Stock Growers Association Endorses New Grazing Bill: At its annual convention in Billings, Montana, March 30, the Montana Stock Growers passed a resolution endorsing the new grazing legislation as proposed by the Secretaries of Agriculture and Interior. Mr. Dan C. Casement addressed the meeting and was well and favorably received. Mr. Casement explained briefly that his job was to review the "Rachford" report and make recommendations. He made it quite clear that he had a keen appreciation of grass values and was for conservation in their use.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

What is Forestry? "Oh, so you are in the Forest Service. What do you do - ride around and look for fires?" How many times have you heard these or similar remarks? I have heard them many times and it has suggested to me that these impressions on the part of many outsiders are the result of our continuous hammering on fire, fire through PR work, almost to the total exclusion of other Service work. This is probably because we apparently need their assistance in fire prevention more than in our other activities. But it has created the very general idea that our duties consist of fire protection. I believe that our American Forest Week activities should be devoted to giving a general outline of the facts of the forestry situation in the country; show the extent of the National Forests and touch on their various resources,- timber, watershed, grazing, recreation, etc. We should explain our aims and how we are protecting and developing these lands. Cover fire as an important part of the job but not all of it.--F.L.K., Coconino.

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Taking Advantage of Specialists: Supervisors are urged to recognize the training feature of assignments of Rangers or other Forest officers to special project work such as studies work under way on various Forests and party work of various kinds. Viewed from the training angle, every advantage should be taken locally to give Forest officers an opportunity to participate in such work to a sufficient extent at least to make them capable of supplementing the formal projects with individual observations as occasion therefor demands. At the Denver Conference it was brought out quite clearly that specialists should not be self-perpetuating but that through the training process we should aim to make more and more unnecessary the use of specialists on less important transactions.--F.C.W.P.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Timber Stands: A compilation of statistics on the timber stands of all the National Forests in the country has recently been completed by the Washington office. Some of the facts shown may be of interest to statistically-minded persons.

District 4 has more timber than either District 3 or District 2, beating out District 2 by a narrow margin of about one billion feet. District 6 has the most, about six times as much as District 4, which has 36,652,589 M feet. The State of Idaho stands fifth in the amount of National Forest saw timber, being exceeded by Oregon, California, Alaska, and Washington, in the order named. Utah stands eleventh in the list and Nevada twentieth. There are now thirty-five States and Territories containing National Forest timber and many of the eastern States exceed Nevada in quantity, although their area is vastly smaller than that of the Navada National Forests. Georgia, Minnesota, North Carolina, Tennessee, Virginia, New Hampshire and Arkansas all contain more National Forest timber than that State.

District 1 has more lodgepole pine than any other species. In District 2, Engelmann spruce leads; in Districts 3, 4, and 5, western yellow pine is the chief species, and in District 6, Douglas fir. District 4 has more hardwoods than any other district (aspen) and is also credited with more blue spruce and juniper of saw timber size than any other District.

Four Forests in District 5 and eight Forests in District 6 have more timber than the Idaho Forest, the leader in District 4. No Forests in Districts 1, 2, or 3 exceed the Idaho (about 8 billion feet).

(They must use small saw timber in District 4.--Ed.)

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Putting One Over: For once we have put one over on a crooked "mining" outfit as the following item from the March 25, 1926, Los Angeles Times shows:

"Cyril J. (Free Lot) O'Connor yesterday was ordered to pay a fine of $1001 or serve 121 days in the city jail after he was convicted by a jury of petit larceny, obtaining money under false pretenses and false advertising.

O'Connor was tried before Judge William Frederickson, on charges filed in connection with the sale of building lots at Big Bear Lake. O'Connor advertised and sold quit claim deeds to the lots when he had no clear title of transfer, according to Deputy City Prosecutor Reams."

The game being worked was a "raw" one even for Southern California. Mineral locations were plastered on valuable recreation lands in the Big Bear region, the claims were surveyed out into town lots, and were sold to some 2,000 "suckers" of all kinds, a quit claim deed being given.

As usual in such cases "Ole" Friedhoff helped put the skids under them. The District Attorney of Los Angeles County comments as follows in a letter to Friedhoff:

"Please accept my sincere thanks for the assistance you rendered us in this matter as your testimony was the basis of the entire case."

Now it is about time for some one to demand an investigation of the Forest Service for interfering with "mining" in the Forests.--L.A.B.

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Real Traders: In 1923 the Shasta Forest exchanged 27.79 acres of cut-over National Forest land for 2,828.36 acres of Weed Company land, all of which the company classed as cut-over, and valued at $1 per acre. The Government land was about one mile from the company's logging town of Tennant, and, on the basis of one special use application and by working our imagination overtime, we were able to figure a present value of $2,834.75 for the 27.79 acres. We now have a timber sale going on, in which we scaled 174,640 feet of yellow pine valued at $523.92 and marked 300 M feet more, located on part of the "cut-over" land we received.--B.C.G.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Suspicious: Ranger Bill Sethe of the Rainier Forest reports: "Hank, the hired man from down the valley, rushed into the R. S. the other day with first reports of a murder on Smith Creek Ridge. I started dragging my feet off the mahogany but remembered the vertical nature of the ridge scenery and promptly decided murders were for sheriffs. So Hank dashed on, later returning in a fast car from Morton with deputy, J. P., and undertaker. Leaving the car they toiled up and through the chaparral and around the cliffs to the newly-made grave. And breathlessly uncovered - the charred remains of a fine example of dead camp fire!

The J.P. when interviewed later did not give a very coherent statement. It was gathered, though, that he recommends the labelling of all graves, noting the contents on a weather-proofed card."

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The Little Gold Forest Service Badges can now be secured in Portland from W. S. Myers, a manufacturing jeweler, located at 512 Swetland Building. The price is $1.50 and the pins are very well made, the letters and the little tree standing out quite distinctly. They are complete with safety catch.

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DISTRICT 7 - EASTERN DISTRICT

Live Stuff: The following letter was sent, under date of March 20, to 1,300 fire wardens and cooperators on the Shenandoah National Forest. Read it and then wonder no longer at the small part played by that Forest in the man-caused fire record, with local public relations like this in vogue:

"Dear Friend:

I am a little late writing you this spring and I hasten to get my message to you before the fire season cleans up the snow and dries out the leaves and keeps me so busy that I have no time to tell you of some of the things we have been accomplishing along fire prevention lines.

A survey of the privately-owned land in and adjacent to the Forest has convinced me that the average timber owner is not equipped to protect his holdings from fire, its most destructive enemy, without an expenditure unreasonably in excess of good business practice, and we have decided that it would be possible, with our facilities and organization, to extend to private timber owners at a very nominal figure approximately 1¢ per acre per annum, the same protection as is accorded the National

Forest. Since it would be impractical, of course, to handle this work at 1¢ per acre where the acreage is very small, a minimum charge of $1.00 per annum has been established. If you own timbered land in or closely adjacent to the Forest, and wish to have us protect it for you on this basis, I shall be glad to hear from you and to explain our plan in detail.

The President has again set aside the week of April 18-24 as American Forest Week. You will hear further from us about it and we hope for your cooperation in making it a real Forest Week.

You were, no doubt, interested in the Apple Blossom Special and its message from the Valley to the southern States. It has now returned to the Valley and reports a wonderful trip. We sent with them pamphlets of the Valley, a history of the Shenandoah National Forest, and a panel of photographs taken on the Forest. The panel, which I consider a very attractive one, is now on display in this office and I would be very glad to have you come in and look it over at any time. I am sending you a copy of the history with this letter. Can you give us some interesting facts that have been overlooked?

Some of our most attractive photographs have been made into lantern slides, and I feel sure you and your family would enjoy seeing them. You will recognize practically every picture. They will be at the disposal of the Ranger in charge of your district, and he will be glad to arrange to show them at schools, churches, or other public gatherings.

We are counting on you as always to help us make this a FIRELESS FIRE SEASON - It has been done, we can do it again.

Very sincerely yours,

S. H. MARSH, FOREST SUPERVISOR."

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DISTRICT 8 - ALASKA DISTRICT

Development of the Pulp and Paper Industry: The great future forest industry of Alaska is the manufacture of pulp and paper, and especially newsprint paper. The two National Forests of D-8 are capable of producing 1,500,000 tons of newsprint paper in perpetuity. This is one-half of the present total requirements of the United States.

Cheap and abundant power is second only in importance to the timber supply in the development of the newsprint industry and this exists in Alaska in the form of water power. Five hundred thousand horse power is required for an annual production of 1,500,000 tons of paper, and investigations made to date show this amount of power to be available.

Other favorable factors for the industry include water transportation for logs from the woods to the mills and for paper from the mills to market; low logging costs as the time is readily accessible and the volume per acre is high; a climate which permits of mill operations and shipping throughout the year.

Changing conditions in the paper industry indicate that Alaska should become an important source of supply for newsprint in the near future. Extensive investigations are being made of the possibilities for the industry on the Tongass Forest. Over 800,000 acres of pulp timber have been cruised and mapped and all of the larger power sites have been surveyed to show their capacities and cost of development.

Assistant District Forester Heintzleman is now on leave in the States and Canada spreading the good gospel to hasten this too-long-delayed industry in Alaska.--J.M.W.

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Reforestation in Southeastern Alaska: No extensive lands need, or apparently ever will need, artificial reforestation in Southeastern Alaska. This is country with abundant precipitation, mild climate, and very low fire hazard, thus presenting conditions which are very favorable for natural restocking of cut-over areas and light burns. All cut-over areas examined, now show adequate regeneration. The chief problem regarding reforestation in Southeastern Alaska is the control of species in the next stand. The forests of Southeastern Alaska, comprised principally of Western Hemlock, Sitka Spruce, Western Red Cedar, and Alaska Cedar, are chiefly valuable for the manufacture of pulp and paper. Present-day methods of manufacture require, in Alaska, not less than 25 per cent spruce wood. Timber reconnaissance work indicates that an average of 20 per cent of the virgin forest is spruce. The chief object of management, therefore, must be to secure at least 25 per cent spruce in the next stand.--J.M.W.

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RL 7

Service Bulletin
U. S. FOREST SERVICE
(Contents Confidential)

Vol. X, No. 17. Washington, D. C. April 26, 1926.

BONDS FOR PLANTING

By Allen S. Peck, D-2

Through the kindly indulgence of the powers which preside over our destiny at Washington, the Rocky Mountain District has been allowed to spend about 40 per cent of the Service planting funds for the last few years. With this money, as a result partly of favorable conditions and partly, we hope, of the painstaking care and skill of our little group of planting experts, the District has succeeded in planting well over 50 per cent of the total area planted throughout the National Forests each year, our score running as high as 58 per cent in one recent year.

Now comes the news that, with no prospect of an increase in planting funds and with an ever-increasing demand for planting on eastern Forests, purchase areas, and recently-added military reservations, our District faces a cut in planting funds and reduced program within the next few years. It is said that the Eastern District has the makings of a hundred thousand acre planting program right in its dooryard and that it is particularly essential that the newly acquired lands be placed in production at the earliest possible date. It is said that the public demands this, and with reason, and that it will look askance at a forest administration which does not produce forests.

Well, the same argument will hold for the Rocky Mountain District. We estimate that there are altogether a million acres of non-restocking, burned-over lands in the District which require planting to place them on a productive basis within the reasonably near future. Not only that, but we are embarking or trying to embark upon a rather extensive exchange and purchase program in the Lake States. The situation now faced by District 7 will also hit us between the eyes before we have progressed very far with this program, for certainly a large part of the lands to be acquired - it will be safe to say 50 per cent - will need artificial restocking in order to assure the degree of productivity which the public will certainly expect under Government protection and administration.

It seems to me that the success and worth-whileness of our extension program depend very largely upon our ability to reforest, and that with reasonable speed. For further facts pertinent to this subject, see the Forester's Annual Report dated October 10, 1925, Pages 28, 29 and 30, if you have not already read it. You will find it instructive and convincing.

This perhaps unseemly exhibition of public mourning is not intended as a wail against the decree of duly constituted authority. Far from it. Our case will be presented with due decorum through proper channels and will have to rest upon its merits. What I want to suggest is the utter futility of continuing to think of forest planting on the National Forests as an item to be paid for out of current appropriations year by year. The Forester has attempted to present to Congress the need for an enlarged planting program and will doubtless continue to do so, and perhaps with some degree of success, but it is apparent that any great increase will be frowned upon, for the present at least, as being inconsistent with the general financial program of the Federal Government.

Why not, then, regard planting frankly as a capital investment for which special provision should and must be made? I was much interested to note in a recent issue of the LUMBER WORLD REVIEW a suggestion regarding the bonding of forest lands for the purpose of putting them in a productive condition immediately. I hope the LUMBER WORLD REVIEW, other mediums of publicity, and organizations will take this idea up and push it hard. More power to them!

Let's all raise our sights and think in terms of large investments now, in our lifetime, in reforestation projects. Surely if we all get to using the same wave length, the impact of these combined thought waves is bound to have some effect. In the words of Walter Mulford in his ringing "Challenge" to foresters before the Society of American Foresters a year ago last December, "Why not several billions of dollars, if necessary, to get forests going in America NOW?"

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OBJECTIVES AND PLANS OF RESEARCH

By Earle H. Clapp, Washington

The primary objective of the Branch of Research is research, the purpose of which is to obtain the scientific foundation for and thus help ensure:

A. Supplies of timber and other essential forest products suitable in quality and ample in quantity for national needs.

B. The greatest indirect benefits from the forests in the regulation of streamflow, prevention of erosion, etc.

C. The largest and best forage crops and their fullest utilization consistent with A and B.

D. The fullest and most profitable use of forest land.

Classes of Research

I. Silvicultural.--To help ensure general objectives A, B, and D and to a smaller extent C.

Silvicultural research should in general supply for all types and forest conditions the scientific foundation for:

a. Methods of cutting, including slash disposal.

b. Artificial reforestation.

c. Cultural operations such as thinnings.

d. The determination of volume growth and yields.

e. Protection against fire; fire suppression and also possible beneficial uses of fire; protection against and methods of control of fungous diseases and insect epidemics, supplementing from the silvical side the work of pathologists and entomologists; similar work for destructive animals;

f. Forms of management for the regulation of streamflow, prevention of erosion, and special forest products such as naval stores.

g. The preceding must involve both empirical investigations and fundamental investigations of ecology, physiology, soil science, dendrology, genetics, etc.

h. The entire group of investigations should make possible maximum timber crops of the highest grade material of desirable species and of the maximum benefits from forest influences. The general progress of silvicultural research should be from the general or empirical towards the fundamental. Programs should be concentrated on only the number of problems on which real progress can be made instead of scattering over a wide field.

Silvicultural research is being concentrated at a series of Forest Experiment Stations. The Forest Service program calls for one station in each important forest region of the continental United States, 11 in all, with additional stations eventually in Alaska and the West Indies.

One objective in the organization of the Forest Experiment Stations is a well-rounded-out attack on all phases of the timber growing problem in recognition of the fact that the forest is a complex biological unit, with many interrelated forms of life and interacting environmental factors. On the staffs of the stations foresters from the Forest Service are being supplemented by pathologists from the Bureau of Plant Industry, entomologists from the Bureau of Entomology, and zoologists from the Biological Survey. Arrangements are being made for meteorologists from the Weather Bureau. Soil scientists will later have to be furnished by the Forest Service or the Bureau of Soils.

The organization plan of each station calls for a central headquarters for the technical staff, a series of branches or centers of work, one at or near headquarters, and a limited number of others, each representative of a subregion. The experimental work is being concentrated at these branches. Experimental-demonstration forests will be developed at the more important branches, and wherever feasible will among other things include natural areas. Such forests should offer an exceptional opportunity for study, training, and demonstration.

Objectives as to classes of owners to be served include:

a. The Federal Government, for the National Forests on all problems.

b. Private owners on regional problems, or until other research agencies are available, on local problems as well.

c. States on regional problems, and on all problems until they can develop their own research agencies.

II. Grazing research.--To help ensure general objectives B, C, and D, and to a smaller extent A. Also to help ensure the largest and best forage crops and their fullest utilization, on the non-forested western ranges.

Grazing research should in general supply for all forage types and range conditions and for different classes of domestic livestock the scientific foundation for:

a. Systems of forest range management.

b. Methods of handling livestock on forest ranges.

c. The determination of range carrying capacity.

d. Protection of ranges from rodent and other forms of damage, and of livestock from poisonous plants, etc.

e. The correlation of range use by livestock and game.

f. The preceding will include a large volume of both empirical research and of fundamental research on ecology, food values, influences, physiology, genetics, and taxonomy of the subordinate forest vegetation or forage.

g. The entire group of investigations should make possible the maximum forage crops and their maximum utilization by livestock consistent with timber growing and the prevention of erosion.

Grazing research is being concentrated at a series of Range Experiment Stations. A regional program which provides for 5 stations has been formulated for the West similar to that of the Forest Experiment Stations. Some provision must sooner or later be made for the East. The work is being closely correlated with or in actual cooperation with the Bureaus of Plant and Animal Industry, Agricultural Economics, and the Biological Survey.

Objectives as to classes of owners to be served include:

a. The Federal Government, for the National Forests and the ranges of the public domain.

b. Private landowners and livestock growers.

III. Forest Products Research.--To help ensure general objectives A and D.

In general forest products research should supply the scientific foundation for:

a. Lessening the drain on the forests by reducing waste.

b. Stimulating the growing of timber and thus the use of land through more complete utilization and hence higher returns to landowners.

c. Making wood serve more efficiently and hence bringing about other large financial economies if not the saving of wood itself.

d. The preceding necessarily include for the wood of all American species, with emphasis on the more important, both empirical and fundamental research on the structure, strength, heat and moisture relationships, and other physical properties, the chemical properties, and the relation between properties and growing conditions.

e. They likewise necessitate investigations of all conversion processes such as logging, lumber manufacture, and remanufacture, seasoning, pulp and paper making, wood distillation, etc.; the protection by preservative treatment or otherwise against fire, insects, fungi, and marine organisms; of design and specifications; the properties essential to specific uses; of the proper correlation or integration of industries to ensure full use; and of all wood uses.

f. Other products such as resins, gums, natural preservatives, tannins, dyes, and other extractives require research along somewhat the same general lines as wood.

Forest products research is being concentrated primarily at the Forest Products Laboratory, with relatively small-scale activities at four Forest Products Offices. The Forest Products Laboratory is national in its field. The District Products Offices are regional for a restricted investigative field. The Washington Office of Forest Products attempts only a small amount of research as an incidental activity.

One objective of the Forest Products Laboratory is a well-rounded-out attack on the entire wood utilization problem, in recognition of the fact that wood is a complex biological product, all the properties, etc., of which are interrelated. Engineers, chemists, physicists, foresters, etc., are employed by the Forest Service; pathologists are detailed from the Bureau of Plant Industry; plans are being perfected for the detail of entomologists from the Bureau of Entomology.

One objective as to classes of owners, etc., to be served include:

a. The Federal Government on the utilization problems of the National Forests.

b. Private owners and manufacturers on the broader and more fundamental questions as an ultimate objective, but on more local and empirical questions also until other research agencies come into the field.

While the chief objectives of the Products Offices are in extension, to be discussed later, they conduct some research which does not require laboratory facilities either independently or in cooperation with the Forest Products Laboratory.

IV. Forest Economics.--To help ensure general objectives A, B, C, and D.

Forest economics research should in general supply the scientific foundation for the forest policy of landowners, whether Federal, State, or private, and of the forest industries. The kind of investigations necessary are illustrated by the following:

a. Forest land, its area, classification, ownership, and the economic effects of use and nonuse.

b. Timber. Existing supplies; cut, requirements, growth, imports, exports, and substitution; the economic and social effects of shortages.

c. Forest finance. The economic feasibility of timber growing, including costs, such as protection, insurance, taxation, etc., and returns such as stumpage prices; such investigations should be constructive as well as merely fact finding, as, for instance, in forest taxation; the determination of the proper balance between costs and returns as in fire protection and as an aid to efficiency, and in other phases of forest administration.

d. The manufacture of forest products, costs, returns, finance in general, markets and marketing, some phases of operating efficiency, the economic side of utilization and waste, etc.

e. The distribution of forest products. Costs in relationship to timber growing and stumpage prices on the one hand, and market prices of the products on the other.

f. Similar investigations for other products of the forest such as forage and livestock, for forest influences, etc.

Research in forest economics is now concentrated in Washington, except for the Forest Taxation Inquiry at New Haven, and some work by the District Products Offices, the Forest Products Laboratory, and the Forest Experiment Stations.

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In next week's issue Extension of the results of Research will be discussed.

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GRAZING LEGISLATION

By Will C. Barnes, Washington

The present situation regarding grazing legislation is about as follows:

The substitute for the Stanfield Bill, S. 2584, which with a few slight changes is practically the Department's last bill and the same as Senator Norris' Bill, S. 3698, has been favorably reported from the special committee of which Senator Stanfield is chairman. The bill is now on the calendar but with very little chance for its being considered before adjournment, which is planned for June first at the latest.

On April 5, Senator Norris introduced another National Forest grazing bill as S. 3885. This was drawn up by Mr. Philip P. Wells, former Law Officer of the Service now connected with Governor Pinchot's administration in Pennsylvania. It is a short bill, and undertakes to define grazing preferences based on our classifications, A, B, and C. This we feel is not a safe plan from an administrative standpoint. Not flexible enough. Established by an act of Congress grazing preferences could be changed by Congress only, a most unsatisfactory situation for the Service as well as the permittee.

Fees are to be established by the Secretary, based on the "prospective value of the forage," which we feel is rather an uncertain basis.

The measure safeguards the Forests along strong conservation ideas and defines at some length the position of grazing as an activity on National Forests. We feel it does not go as far in this direction as the Norris bill S. 3698.

Senator Norris has also introduced a bill, S. 3963, covering grazing on the public domain lands in Alaska, which has some interesting features. Grazing districts up there are to be established at the discretion of the Secretary of the Interior. It places the administration with that official but calls for the cooperation of the Secretary of Agriculture in handling plant and animal life with especial emphasis on the reindeer problem, which the Biological Survey of the Department has been studying for several years past. The fees to be charged are established on the same basis as in the general public domain bill; they are to be "moderate" and established at the discretion of the Secretary.

After deducting costs of administration the remainder of the fees is to be turned over to the Territory of Alaska for local purposes. Fees are to be paid annually or semi-annually as the Secretary may direct.

The bill provides for free grazing of the reindeer belonging to "Native Eskimo and half breeds who have not severed their relations with their people or exercised the right of franchise." These may graze free any number of animals they own or control. In connection with this it is interesting to note that recently the officials in charge of the reindeer business up there have arranged for a general movement southward of the reindeer herds the intention being to concentrate them in the region adjacent to the Government railroad between Anchorage and Fairbanks. This will give them an opportunity to ship meat which they cannot do at present. It will be an interesting experiment for the range in the Fairbanks region of quite a different class of forage - meaning moss when reindeer are considered - and the animals may not take kindly to the change in environment.

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"TECHNICAL" FORESTERS

By C. G. Bates, Rocky Mountain Exp. Sta.

What Calkins had to say in the February 1 SERVICE BULLETIN has much of truth in it. We can't argue with anyone as to the advantages a "practical" man has, and a sturdy one.

We cannot agree so fully with Hutchins and Putnam in the April 5 number. Particularly we can't "fall" for the statement that "upon entering the Forest Service the sooner a college-bred man forgets all the forestry he ever knew, the better off he is." Whether said in jest or seriousness such a statement is today untrue.

Preachments get nowhere. I therefore state it as a fact that not 10 per cent of the foresters in the Forest Service know the technique of the job which faces them immediately, and men who know that technique are certainly what we mean by "technical foresters." I refer to the job of putting a Forest, or any unit of a Forest, on a sustained-yield basis. And the above statement refers to as many of the college graduates, at least within one or two per cent, as of the more ambitious group of self-made men whom we are pleased to denote as "real foresters."

Of course, if one were compelled to make a management plan,- including a prognostication of sustained yield,- for only one unit of a Forest, and had the remainder of the Forest and of adjacent Forests to fall back upon for any over-cut which occurred, one could do a pretty rough job today and "get away with it." But I ask you, would any "practical" business man tolerate a bookkeeper whose knowledge of his job was so hazy that his books might miss a balance by from 15% to 25%, even though he were an excellent handy man around the office?

To make the charge more specific, I venture the statement that not more than the 10% referred to can collect the growth data needed for a yield prognostication in an acceptable form, or, given such data in exactly the form needed, can escape all of the purely mathematical stumbling blocks in the way of a correct calculation of future yields. And I am not implying any silvicultural knowledge at all, such as might be needed to draw "prediction curves" with a semblance of accuracy, to allow for a death rate in the stand, and similar contingencies.

It is time to stop berating "technical forestry" and to develop a little professional pride in the technique of the jobs on hand today. Leaders in the Service, as well as the lowliest, can afford to get out their shelf-worn tectbooks and try to recall "how it is done." Failing this, I shudder to think of the day when forestry may be "sold" to the timberland owners as a whole and we as a group be asked to figure their possible profits.

Let's have the next Pack Prize for an article on "How to Handle a Tract of Timber on a Businesslike Basis." Show me, if you can by any specific facts, whether Uncle Sam, for example, is going to lose 4% or make

4% on his timber holdings. Due allowance may be made for any factors not actually determinable - acts of God, of Legislatures, etc.

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YE EDITOR'S CORNER

"Technicians and Others" seems to be a live subject if the editor can judge by his morning's mail. We are giving you C. G. Bates' thought about it, and have a fine article by Colonel Greeley for next issue.

You technicians (and others) who have something to say on our common interest problems ought to use the SERVICE BULLETIN to let the rest of us know what you have found out. It may help us.

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DISTRICT 1 - NORTHERN DISTRICT

Lath Production in the Inland Empire: During the year 1925, 35 band mills in this region produced 1,[illegible],000 M board feet of lumber. As a by-product in this process approximately 171 million lath were manufactured. Several of these mills make no lath and a majority do not attempt to secure all the lath possible from the mixed woods. The following production by species does not therefore represent the maximum obtainable from these species, but, rather, indicates the average amount of lath now produced per M feet of lumber cut:

Species	No. of Lath per M' of Lumber Cut	Species	No. of Lath per M' of Lumber Cut
Idaho white pine	185	Cedar	63
Western yellow pine	156	Spruce	59
Larch - Douglas fir	57	All pine	170
White fir	80	" mixed	64
		" woods	135

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DISTRICT 3 - SOUTHWESTERN DISTRICT

D-3 Grazing Reconnaissance Accomplishments: From April 17 to November 15 of last year, the Reconnaissance crew covered 371,942 acres of the Frisco and Tularosa Districts of the Apache Forest and the Elk Mountain District of the Datil Forest, at a cost of $.0204 per acre. Average acres per man per day covered were 1094. In the fiscal year 1925, 89,415 acres were covered by the intensive horseback method at a per acre cost of $.0262 and with an average of 1192 acres per man per day. In the fiscal year 1926, 282,527 acres were covered by the intensive foot method at a cost of $.0187 per acre and 1,067 acres were covered per man per day on an average. An average of 8 past reconnaissance projects which were worked by the intensive horseback system, which was in actuality more nearly extensive, show an average per acre cost of $.0073. Intensive footwork in 1926 resulted in a cost per acre of $.0187 or a difference of $.0114. From this, Mr. Morris, Chief of Party, believes that the present system of intensive footwork is more to be desired when taking into consideration the more and better data that are collected and the more intensive training that is given to new men.

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DISTRICT 5 - CALIFORNIA DISTRICT

High Powered Fire Cooperation: What is considered as a big step ahead in "nationalizing" the large areas of private land on the San Bernardino for fire protection was initiated by Supervisor Boulden and County Forester Tuttle at a recent meeting of landowners, held in the municipal auditorium at San Bernardino.

The plan was presented by Boulden and Tuttle. Dr. Baylis, landowner and member of the County Board of Forestry, told them why they should all organize in a body from now on in order to accomplish various needful benefits. A committee was appointed to draw up articles and by-laws for the new Crest Landowners' Association. As a starter they will pay 20 cents per acre for some 15,000 acres of private land.

San Bernardino County will probably agree to deposit a fund to pay for any fire suppression work on these lands. The result is that these landowners will have a better fire insurance than they have had so far. With their lands tied into the forest protection of the Service, no distinction will be made in patrol and fire fighting under supervision of the Forest Service.

This is only the beginning. It will mean still more intensive forest protection, insect control and fire fighting improvements as the organization and its cooperative fund grow.--H.V.B.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

The Advisory Council of the Experiment Station, recently appointed by Secretary Jardine, held its first meeting February 12. This is a group of representative lumbermen and foresters called together to discuss forest research and suggest projects which should be undertaken. C. S. Chapman of the Weyerhaeuser Timber Company, was elected chairman. The sixteen who were present gathered about a round table and had an informal all-day discussion. The council consists of the following: Representing the lumber industry,--C. S. Chapman, Frank Lamb, Russel Hawkins, E. S. Collins, A. C. Dixon, E. T. Allen, A. W. Cooper, and R. S. Moore; representing the paper industry,--B. T. McBain; from the forest schools--Deans Peavy, Winkenwerder and Johnson; representing British Columbia--J. L. Alexander; State Foresters Elliott and Joy, District Forester Granger, and Director Munger.

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DISTRICT 7 - EASTERN DISTRICT

Nuggets: (Sounds like mining gold, but it isn't.) "After departing from the land where Idaho white pine brings a stumpage of $16 per M, I naturally jumped to the conclusion that such prices were hard to beat. Life, however, is subject to great delusions. After spending two weeks attached to the Unaka, a sale was made for $50 a M, but only for 10 M. This price was obtained for curly maple to be used as extra fine veneer. The trees are few and far between and located in the most inaccessible places. The prospective purchaser combs the hills until he locates his prize and then informs the Ranger, who looks over the proposition and marks and scales the timber. The older the trees, the better. In fact, all trees sold are overmature veterans. Utilization is to a 9-inch top diameter and no cull is allowed, this being according to the operator's request. He was willing to pay for full scale. It seems as though the operators get full scale and so does the Forest Service, the operators claiming that in veneer logs a hole can be plugged. The logging costs seem all out of reason and a detailed appraisal is impossible. The operator paid the Hassinger Lumber Company $50 a M for loading the cars with a power loader. As far as skidding, hauling and other operations are concerned (nuff sed), the logs are handled very delicately.--S.R.B.

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Service Bulletin
U. S. FOREST SERVICE
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THE TRANSIENT SUPERVISOR

By Crosby A. Hoar, D-2

The report of the Denver Conference stresses decentralization. Committee No. 1 says: "The first requirement is to develop Supervisors and Rangers into real managers of producing properties," and "the management of National Forests involves ------ the difficult technology of growing the most complex of all crops and the ability to correlate large masses of facts into plans that look decades ahead."

Some excellent recommendations follow for developing Supervisors and Rangers along the desired lines. There is one point, however, which seems to have been omitted, and which the writer considers very important. I refer to a more permanent assignment of Forest personnel.

My memory of D-2 goes back to 1910. I have tried to list the Supervisors on each Forest since that time in order to determine the turnover - including the Michigan, Minnesota, and Superior, which were in D-1 in 1910, but excluding Forests which have lost their entity through consolidation. If the list is not exact, it is at least conservative. It shows ninety Supervisors on twenty-five Forests, equal to 3.6 Supervisors per Forest in sixteen years, or an average of 4.4 years spent by each Supervisor on each Forest. Omitting three Forests on which the same Supervisors have stayed throughout the period, the average would be just about four years.

I shall not argue whether such frequent shifting of Supervisors is necessary, but only suggest that it entails a serious loss to the Service. It takes at least one year, and probably two, for a Supervisor to acquire the acquaintance with the geography, business, and human elements of his Forest which is required to handle it effectively. From twenty-five to fifty per cent of his stay on each Forest is therefore accompanied by subnormal capacity for accomplishment. Each year adds something to his stock of local knowledge and experience and enables him to direct the business of his Forest with greater ease and precision.

Zon has said that foresters should be gifted with longer life than other men so that they might see the result of their work and learn from it. Moving men constantly makes them broad, but not deep, in woods knowledge.

Frequent moves also have personal consequences which affect official work. They cost money and friendships. They make home a temporary habitation. They prevent the development of pride in one's Forest and of the sense of proprietorship. They tend to make the management of National Forests a job instead of a profession.

Of course we shall always have changes, and good reasons for them. Possibly the advantages will continue to outweigh the disadvantages, as our present policy indicates is now the case. But I doubt that Supervisors can ever become the kind of Forest managers which the committee clearly wants unless they stay long enough on one Forest to surmount its routine and become absorbed in its deeper problems. It will take more than four years.

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THE JOKER IN REG. T-11

I was especially interested in the article by Dana Parkinson of D-4 on the impounding of stray stock, which appeared in the SERVICE BULLETIN of March 22. It is stated in that article that nineteen round-ups were conducted and that a total of 2,783 head of trespassing stock was accounted for.

I was also interested in the costs of these round-ups and particularly in the fact that it cost $4,647.43 to conduct the work but that the receipts due the Forest Service were only $875.12 (redemption fees) so that this amount alone was all that could be vouchered against in defraying the expenses of these round-ups.

QUESTION: Who Payed the Balance?

That, in short, is the joker in Reg. T-11.

This Regulation gives us the necessary authority to impound trespassing stock, but unless you can collect enough redemption fees you or somebody is "stuck" for the expenses of the round-up. I would like to be informed as to how this deficit was handled. Perhaps it will help some of us in the eastern part of D-1 to finance a round-up or two.--A. E. Cole, Deerlodge.

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ANSWER: Reg. T-11 is an administrative measure developed for the express purpose of eliminating trespass as far as any one regulation could do so. It was not developed with the idea of making a profit or coming out even in each specific instance in any one year, but that in the long run administrative expense would be materially lessened and better protection to the range secured through better observance of the regulations.

In recognition of these principles District 4 attacked the job in a systematic plan-wise manner and set up the necessary funds to carry the work to a successful conclusion. This District acts on the principle that you cannot expect to reach the objectives of range management or secure the cooperation of law-abiding permittees if the range is occupied by unpermitted stock.

There is no "joker" in Reg. T-11. It is better business to clean up a bad situation at some expense than to allow it to continue to worry and occupy the time of Forest officers. In the D-4 instance, however, the total cost of impounding was $4,647 and the receipts were $4,588, of which the Forest Service received $875 to cover costs, and the balance, $3,772, was paid into the treasury of the United States. The Government was, therefore, short $59. Isn't it a good investment?— C. E. Rachford, Washington.

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TECHNICIANS AND OTHERS

By Lee P. Brown, Crater

A few years ago the technical assistants of all Forests in this District met in Portland for several days to discuss their work. Taken as a whole, the meeting was worth while to the men, but the Products and Research men were the only ones that added any technical or scientific atmosphere to the meeting. Part of one afternoon was given over to the discussion of the technical assistants' place in the scheme of things and I think a few of the ideas brought out there would bear nicely on Calkin's and Hutchins' and Putnam's articles on "Technicians and Others," so here goes:

First of all, there are technically trained foresters who do not practice the forestry they know, and, then, there are some non-technical foresters who have never looked at a text book who practice a brand of forestry as good as the best in any book. For example, take the splendid marking and sales administration of some of our rangers and lumbermen,- so-called practical men. One gauge of a field man's interest in the profession of forestry is his interest and knowledge of timber sale work. There is no more fascinating job than that of marking timber on a sale and then following the area through all of the stages of logging and brush disposal and seeing the final result. In other words, there are technical foresters and there are just plain foresters.

In any discussion of scientific forestry, it must be remembered that the Forest Service was originally confronted with the problem of developing and protecting 150 million acres of rough wild land. The first problem was one of personnel, organization, administration, and protection of this area. Back of it all was the necessity of building up an active public support of the Forest Service and intelligent approval of the principles of Forestry. This was no small task and has been accomplished during the first twenty-year period of the Forest Service. As the industrial development of the Forests increases, the demand develops for more intensive practice of Forestry. This does not mean that the problems of organization and administration are less in volume, but they are gradually being displaced in importance by those of scientific forestry, as the latter grows with the more intensive use of the Forests.

The discussion at the meeting brought out the fact that most technical foresters look toward the day when they will have the direct responsibility of developing and administering a forest (size doesn't matter) and accounts for the interest of the great majority of foresters in administrative problems rather than in purely theoretical or scientific ones. This isn't a fault. To use Hutchins' and Putnam's illustrations, the administrative officers and Rangers of the Forest Service correspond to the managers and field employees of the General Electric Company, while the company's engineers, laboratory physicists and research men find their counterpart in our own Branch of Engineering, Experiment Stations, and Forest Products Laboratory.

The discussion at the meeting brought out the point that the technical and assistant or deputy positions on the Forest carry a great deal of responsibility but little authority. The uncertain status of the technical man and the elastic limits to what he may or may not go trouble him until he learns to define his own status and set his own limits. In short, he is out of place until he learns to adjust himself into the individual Forest machine as a smooth running part of the whole. If you consider the Rangers as the motor that drives the Forest machine, the Supervisor as the throttle that controls, then you might conceive of the technical man as the master gear that connects and joins the whole. For to him come the compilation of reports from the field, the doing of special jobs, the making of plans, of carrying on investigations and of giving advice and scientific help when and where needed. But because of the necessity of a live organization and of the inherent need for a fixed responsibility, he can have little authority to give orders. He can advise and help, but in the end the Rangers and Supervisor must make the decision for their work.

Probably the most disconcerting thing about the technical assistant's or deputy's position is his position in personnel matters, in the disappointments and discouragement (that at times assail everyone, though, thankfully, not everyone at the same time) and the misunderstanding that may arise between officers. Here he must learn when to keep his counsel, when to advise, and how to bring about a satisfactory adjustment of the differences. Always he must be careful not to violate the confidence or trust of the various officers concerned and he must constantly work for the best interests of the job and the Forest.

I think that about covers the ideas I got from the Portland meeting. It's only one slant - others may view it differently. It is true that the need for every officer to use all of the science he knows in the administration of a Forest is increasing, There is room for the practice of all the scientific business administration and intensive forestry we can apply within our economic and financial limits.

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YE EDITOR'S CORNER

Crosby Hoar has introduced another topic on which there are doubtless various opinions current. We are continually on the lookout for these shades of opinion so that we may give our readers the "New Thought" as it is revealed. We take the liberty of assuming that authors of articles are quite willing, perhaps they wish, to have their views discussed and criticized or enlarged upon. That is one way to make the SERVICE BULLETIN interesting. This is an invitation.

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The Weather in Washington these days is quite as delightful as usual. The trees are putting out their bright new leaves. There is a pleasant tang to the air which is especially exhilarating. The cherry blossoms are drawing crowds. The redbuds are in flower; the woods are white with dogwood blossoms and the yellow forsythia blooms are brightening our yards. Later the roses will come - and so on and so on. In fact Washington is a charming place, fully as charming as any District we are sure. Oh yes - they are talking of forming a Forest Service chorus, and, too, we are in the throes of moving. Each Branch is to move from where it now is to some other place in the same building. It seems to be a sort of shaking down process after the manner of jostling the barrel to permit of getting more in it.

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WASHINGTON NOTES

Forest Service to Exhibit at the Sesquicentennial: At the Philadelphia Sesquicentennial Exposition, scheduled to open June 1 and close December 1, the Forest Service will supply one unit of the Department of Agriculture exhibit in the Transportation Building. The Service has been allotted a space 92 feet long by 15 feet deep. In this space will be depicted four phases of the history of this country's forests. Each of the four sections will consist of a curved, panoramic, painted background and a foreground of actual trees and other accessories built up to and merging with the background. Large white pine trees are being shipped in from the Allegheny National Forest for the foreground work.

The first scene will show a primeval forest of white pine such as met the eyes of the first white settlers in America. The second will show destructive lumbering - stark, denuded hills in the distance will explain the deserted lumbering town in the middle distance, and the foreground will be strewn with a wasteful jumble of slash. The third picture will be a forest blackened and smoking from recent fire, charred young trees in the foreground, raising the question of where the forests of the future are to come from. The fourth scene will attempt to answer that question, showing scientific forest cutting and planting, fire prevention, and careful utilization. One feature of this section will be a prosperous small lumbering town in the midst of a productive forest region, offering vivid contrast to the deserted town in the second group.

Supplemental exhibits and enlarged photographs will give in more detail the points stressed in the main exhibit.--P.J.F.

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In Boy Scout Circles: Colonel Greeley and John Cuno each had charge of a Boy Scout Troop in the big pageant held May 1 in honor of Sir Robert Baden-Powell, the founder of the organization. Prior to the demonstration the Scouts, numbering nearly 3,000, were lined up in the White House grounds for a picture. No troop marched any better than Colonel Greeley's. Cuno's boys made a big hit with their stunt of erecting a fire lookout tower under the eyes of the dignitaries. The tower consisted of poles thinned out of a near-by woodland, thus carrying out the Forestry principles presumably inculcated by their Scoutmaster.--M.H.

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For Prize Winners: The American Forestry Association announces two prize picture contests. The first - Cover Page Contest - is for pictures to be used on the cover of its magazine. The subjects must be chosen from the outdoors - forest, mountain or river scenes; wild life in its native haunts; the woodsman at work; the fisherman in action; camp and trail scenes; fires in the forest; winter scenes in the woods; forest activities, either work or play; fire lookouts; wild flowers; trees. These and any other subjects having a rich forest flavor, are eligible. The more action in the photograph, the better. The first prize will be $25, and in the same issue in which the prize photograph appears on the cover page of the magazine will be a short account of the prize winner and the circumstances under which he took the picture. The second prize will be $15 and the third $10.

The second contest - Curiosity Contest - is for pictures of freaks and curiosities of nature, queer forms of tree growth, unusual phenomena, strange geological formations - anything of the out-of-doors that is bizarre or unusual may be made the subject of this contest. A short description of from 50 to 100 words should accompany each photo curiosity.

There will be a first prize of $10, a second prize of $5, and for the third prize a fifteen months' subscription to American Forests and Forest Life.

For both contests pictures of any size are eligible. The closing date will be September 1 and the winners announced in the October issue. Address, Picture Contest Editor, The American Forestry Association, Lenox Building, Washington, D. C. Pictures will not be returned unless accompanied by a self-addressed envelope bearing sufficient postage.

Any additional photographs that may be retained for use in the magazine will be paid for.

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DISTRICT 1 - NORTHERN DISTRICT

Scaling Course: During March a 12-day special scalers' course was conducted at Camp 19 of the Humbird Lumber Company on the Kaniksu Forest by C. E. Knouf, formerly District Lumberman and check scaler and now check scaler for all of the Weyerhauser Company operations in Montana and north Idaho. Fourteen members of the Forest Service and twenty other men took the course, which consisted of actual scaling practice and daily lectures on the principles of scaling. Knouf's bulletin on "Trade Course in Log Scaling for Idaho Woods" was used as a text.

At the beginning 200 logs were scaled without allowance for defect, in order to teach the mechanics of the job, the logs being recorded both by the Forest Service method of scaling to the nearest inch and by the company method of scaling to the lower inch. After this 800 logs were scaled in lots of 200 each, the defective and questionable logs in each lot being gone over on the ground and thoroughly discussed so that each man was able to compare his original scale with the correct scale. Instruction in the measurement of cedar poles and piling was also taken up.

The final examination included a written test and the scaling of 150 logs, which averaged 34 per cent defective. Among the 12 Forest Service men who took the examinations the variation from Knouf's scale ranged from -.81 per cent to + 3.71 on the full scale, and from -4.84 per cent to +9.65 on the net scale. With logs running so high in defect a variation of 5 per cent is considered good, and 3 per cent is excellent. Only three of the men had a variation greater than 5 per cent. The course is believed to have been very much worth while.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

Turn Your PR Guns on Home Folks: Whether to aim at the local people or at tourists in the fire prevention campaign this spring is indicated in the Sheet A data, recently compiled and recompiled. These show that in 1925, of 202 man-caused fires in the Southwestern District, only 26 were caused by people not reached by local forest publicity. A closer analysis of the 26 would no doubt reduce this number.

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Say It with Flowers: Letter just received in Albuquerque calls us the "District U. S. Florits Service." What have we done to deserve this? The writer is interested in the "Pinon Pine Cone Tree" with the view of using it for commercial decorations.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Prevent Forest Fires - It Pays: The Ogden paper tells a story of a new troop of Boy Scouts recently organized here. They are all Japanese. The Scoutmaster took them into the mountains on their first hike the other day and they built their fires and cooked their meal as Boy Scouts of all races do. And then they left their camp fires burning and started for home, the Scoutmaster intending to turn back and call attention to the burning fires so as to drive home more vivedly the necessity of putting them out before leaving. But one of the Japanese boys beat him to it and had hung behind and with a tin can was busily engaged in putting out the camp fires.

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Ambition to be a Supervisor: Supervisor Riddle relates that during his service as a Ranger he, like most all Rangers, had ambition to sometime or other become a Supervisor. Of course, he realized the job carried with it a lot of responsibility and wondered if he would be able to carry that responsibility in the event an opportunity presented itself. His biggest dread, however, was the office end of the work. Some few years ago he was made Supervisor and given the responsibility of handling a Forest with no small number of difficult field problems. While not claiming in any way to be an office man, he is now wondering if the field men look upon the job as he did, or do they see it as he has been brought to see it, that to make good we must be able to handle the work in the field. There is where the biggest responsibility of the entire Service lies.

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DISTRICT 5 - CALIFORNIA DISTRICT

Forest Week First Proclaimed in 1921: One of the most useless things in the world is a wrong date. Every year, round about American Forest Week time, some one manages to get out a few incorrect dates regarding this national observance. It happened last year, and again this year in a statement that the week was first proclaimed by the late President Harding in 1922, which statement appeared in the "Forestry Facts" sent out from Washington, in AMERICAN FORESTS AND FOREST LIFE, and in several of the Forest Service news items.

Forest Protection Week, called American Forest Week since 1925, originated in the Pacific Northwest in 1920, the idea being that of Mr. Herbert Evison, now editor of the WASHINGTON MOTORIST. The first national proclamation of Forest Protection Week was signed by President Harding on April 7, 1921. The only autographed copy of this first proclamation that is known to exist, other than the original in the Secretary of State's office in Washington, D. C., hangs in the District Office at San Francisco. It is the property of Assistant District Forester Hutchinson, who wrote the original proclamation, and was autographed for him by President Warren G. Harding and Secretary of State Charles E. Hughes.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

New Lake: The Stone-Webster Corporation has finished its high dam on Baker River near Concrete, on the Mount Baker Forest. The dam makes a lake nearly eight miles long, and the water descends in a beautiful sheet over a fall 50 per cent higher than Niagara. Since it has been discovered that the highest water in the reservoir will flood a small acreage on the Forest, an application for an exchange has been made by the company.

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A Pinch of Salt: A lot has been written regarding salting plans. How, when, and where to salt has been covered in detail. Here's something new! A request has been received from the Crater for a "Do not salt stock here" sign.

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DISTRICT 7 - EASTERN DISTRICT

Going after 'Em: "Our guards and lookouts are all on. Please let us know if you even imagine you see or smell smoke in the mountains. We don't want even an imaginary fire to get the drop on us. We're all packed and ready to go, but here's hoping it won't be necessary. A fire during American Forest Week certainly would be a disgrace. Please do not let it happen."-- (Extract from Supervisor Marsh's American Forest Week letter to his Forest residents.)

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Progressive Travel: Dr. Wetmore, of the Biological Survey, in a recent publication of the Smithsonian Institute, gives an account of information he secured while in South America, as to the migration of our migratory and insectivorous birds. He reports that, while many of our birds spend the winter in the Northern South American States, a few pass beyond the equator and go South as far as Argentine, Chile, Paraguay, and Uruguay. Among some of these birds of long flight are a few of our best-known feathered companions. Dr. Wetmore found there the barn swallow and the bobolink in large numbers. The cliff swallow and the night hawk also make this extended trip. However, the latter two birds take up their winter quarters from the West Indies southward. Only a few reach the northern limits of the South American States mentioned. Nevertheless, even if they do stop in Northern Uruguay, an enviable progressive travel record is established.

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Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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HOW THE GRAZING FEE STARTED
(A Bit of Ancient History)

By Will C. Barnes, Washington

Former Associate Forester Potter, when in Washington a short time ago, was asked if he knew of any official record or definite statement which had ever been made as to how the question of establishing fees first came up, there being nothing in the Washington files bearing on this subject, so far as any of us could ascertain. Mr. Potter agreed to dictate a statement on the matter. This is in part as follows:

"Following the passage of the Act of June 4, 1897, which provided for the administration of the forest reserves, regulations were promulgated by the Secretary of the Interior with reference to the use of the forage which in general prohibited the grazing of sheep, except in the States of Oregon and Washington, where heavy rainfall lessened the danger of damage to the young growing forest from grazing by this kind of animals. These regulations being in effect in 1898 at the time the San Francisco Mountains and Black Mesa forest reserves were created (now the Coconino, Tusayan, and Sitgreaves Forests) the sheepmen were immediately concerned about future use of the lands within those reserves which had been their customary summer grazing grounds.

"Meetings were called in the early part of the winter 1898-99, and after a discussion of the situation with which they were confronted, the sheepmen concluded to send a delegation consisting of Mr. E. S. Gosney of Flagstaff, Arizona, and myself to Washington for the purpose of presenting a statement of facts to the Secretary of the Interior and trying to persuade him to modify the existing regulations and allow the grazing of sheep upon the forest reserves in Arizona.

"Upon arrival in Washington we called upon Mr. Pinchot and told him our side of the story. He said that if requested to do so by the

Secretary of the Interior he would be glad to make an examination of the lands which were being used for sheep grazing with a view to recommending whether or not a continuation of that use of the forest reserves might be allowed.

"We presented our statement of facts to Secretary Hitchcock, asking that sheep be allowed to continue grazing on their customary ranges within the San Francisco Mountains and Black Mesa forest reserves. He told us that he would take the matter under advisement, but that in the event it was decided to allow sheep grazing upon the forest reserves in Arizona it would be on the condition that a fee be paid for the permits.

"A few days afterwards we were informed that the sheep grazing privilege would be allowed temporarily upon the Arizona forest reserves pending an examination of ranges by Mr. Pinchot and Dr. Coville of the Department of Agriculture and upon condition that a fee of three cents per head be paid for the number of sheep covered by summer grazing permits. This was the first fee ever charged for grazing any kind of livestock upon the forest reserves.

"When we returned to Arizona and the sheepmen learned the successful result of our mission, they were greatly pleased and many immediately sent checks covering the amount of their grazing fee, either to the Secretary of the Interior or to local Forest Superintendents, as they were then called. However, before the time for issuance of the permits arrived, a letter was received from the Secretary of the Interior containing the information that he had been advised by the law officers of the Department that there was no legal authority for the collection of a grazing fee upon the forest reserves, and therefore the money paid by the sheepmen was returned and the permits issued without charge."

In October 1901, Mr. Potter was appointed an agent of the Bureau of Forestry and for the next three years was busy with boundary examinations in Arizona, Utah, and California. In his 1903 report on the California work, Potter made the very first recommendation for the payment of a portion of the receipts from the sale of timber and other products taken from the forest reserves to the States in which the reserves were located. This, of course, included grazing fees. This, Mr. Potter says, was intended "as a reimbursement for the loss of taxes sustained through the lands being held in Government ownership."

There was, however, grave doubt amongst law officers of the Department as to the authority of the Secretary to charge a grazing fee.

Mr. Potter continues:

"Therefore, in framing the bill which was enacted into the law of February 1, 1905, language was included which in the opinion of the law officers provided legal authority for the collection of such fees, as well as the sale of other products on the forest reserves."

That this portion of the law was correctly drawn was confirmed afterwards by the Supreme Court of the United States in the case of U. S. vs Grimaud, a grazing case (220 U. S., 506,521,522),which decision stated:

"The Act of February 1, 1905 * * * clearly indicates that the Secretary was authorized to make a charge out of which a revenue from forest reserves was expected to arise."

This decision was followed, Mr. Potter says, by a regulation promulgated in June, 1905, by the Secretary of Agriculture, which provided that:

"on and after January 1, 1906, a reasonable charge would be made for grazing on the reserves, and the minimum charge for grazing during the summer season was fixed at from 5 to 8 cents per head for sheep and from 20 to 35 cents per head for cattle and horses."

Mr. Potter points out, however, that this regulation stated specifically: "that as the condition of the range improved and the demand for permits warranted it, the charge for grazing would be increased gradually in accordance with the advantages in the different localities."

Referring to this question of grazing fees, Mr. Potter makes the following comment:

"The policy which should govern fixing the amount of the grazing fee has been the subject of much discussion during 1925.

"A fee which would cover only the cost of grazing administration would be unfair to the Government and to the States which receive 25 per cent of the gross receipts from the National Forests as a compensation for the loss of taxes. It would also be unfair to the stockmen using the poorer and more inaccessible ranges,as the cost of administration there is often more than on the better and handier ranges."

Mr. Potter does not believe the proposition of selling the forage to the highest bidder as is done with the timber is fair. He feels that it would encourage speculation and be ruinous to the small ranch owners or homesteaders who could not compete with the large owners and others having no investment in ranch property dependent upon these ranges.

In discussing the charge which should be made, Mr. Potter says:

"In my opinion, the stability of the livestock industry and welfare of the stockmen using the National Forest ranges will be promoted best by the policy of charging an amount for grazing which represents the fair value of the forage according to the location and quality of the range and the limitations under which its use is allowed. This is the only policy which is fair to everybody and reasonably can be expected to be satisfactory to the general public. In the long run, I think it would prove best for the permanent welfare of the livestock industry."

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"TECHNICIANS AND OTHERS"

By Ward Shepard, Washington

The most significant step in personnel development taken by the Service in recent years is in providing opportunities for more all-round experience, especially by the younger members of the Service. This broadening experience will, I believe, be supplemented by the rapid development in the next few years of training within the Service. Both these policies were crystallized at the Denver meeting. They will remove the complaints of young forest school men that they lack opportunities to use what they learned in school, and give to men who have not had a chance to go to forest schools opportunities to get training in forestry theory and practice and to compete with their school colleagues in the more "technical" parts of National Forest work.

It is well to recall that a forest school graduate is not really a forester. He has picked up some of the elements of his trade, but he can become a real forester only by long and assiduous practice of silviculture and forest management. The Service must provide the opportunities for this practice, as well as for formal training, both to the "technical" and the "practical" man.

There is still a gap to be closed before the Service can become the training ground of expert silviculturists and forest managers. To promote a healthy growth of interest and skill in silviculture, the higher-ups (Supervisors and District and Washington Inspectors) must themselves show interest. The Forester, in sending out the Washington office plan of work, has asked the whole organization to keep in touch with our "timber-farming" work. In carrying out this plan I can think of nothing better for the moral atmosphere of the Service than a stiff requirement that higher-ups spend at least two weeks a year on a timber sale - not inspecting, but marking, piling brush, studying growth rate, and doing the other things that make silviculture an art rather than a theory. To say that we haven't time for this would be to imply that we are governed by quantity rather than quality standards, which isn't true. Silviculture (including protection) is our main business, and our whole personnel ought to advance steadily in it's mastery. It is true, however, that many officials in the Service have had little opportunity to practice silviculture since their earlier days in the Service. No amount of inspection of sales can take the place of actually wielding the marking ax, any more than going through a museum every six months will make a sculptor. No art can be perfected except by working in the medium of that art.

Our efforts to give our men better opportunities to practice forestry should include the oldsters as well as the youngsters. I am sure that once having made the plunge, they would find the experience a most pleasant interlude to bossing other people, and I am sure too that it would freshen interest and create new outlooks on our job. Education is a process that should not end with middle age.

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REDUCING MAN-CAUSED FIRES

By C. N. Woods, D-4

In District 4 there are very few incendiary forest fires. Man-caused fires are due to carelessness, resulting from lack of appreciation of hazards, and failure to think at the right time.

The problem is one of educating the public in what needs to be done to avoid starting forest fires, and to have this knowledge well up in their consciousness while they are traveling on the National Forests.

In addition to the ordinary publicity work, the following steps are being taken in times of unusual hazard in this District:

(1) The stationing of a man here and there near the entrance to the Forests on main highways to stop travelers, and to caution them of the bad conditions obtaining, and the necessity of unusual care to avoid starting forest fires. This action was taken to some extent during the season of 1924, and it is believed with very beneficial results.

(2) The closing of Forests, excepting the main highways, to smoking while in motion. This action was also taken in 1924, apparently with pretty full support by the public, and it is thought with good results. Man-caused fires being due in this District to carelessness or thoughtlessness, if people can be made to think and to avoid subconscious acts, such as the absent-minded throwing away of matches or cigarette stubs, it is believed no smokers' fires will result. Therefore, it is not thought necessary to absolutely prohibit smoking, but only to prohibit it while in motion, since if one stops to smoke, he will think of the hazard and be careful with his matches and cigarette stubs, etc.

(3) Special fire signs have been printed for use in very hazardous periods. These are printed in large red letters on a yellow background. The largest signs are about 18 by 20 inches. It is intended to use these signs only when the hazard is extreme and to take them down as soon as bad periods have terminated. It is believed highly advisable to use something different from the ordinary fire sign when conditions are extraordinary. Most people do not appreciate the great difference between ordinary and extremely bad conditions. It is thought the fire warnings mentioned will be of considerable aid in impressing the public when an extremely bad period occurs.

These signs carry fewer than a dozen words, such as "Danger! Bad Forest Fire Season. Be careful!" "Fire Danger Now Extreme. Be very careful!" "Fire Danger now Very Great. Use extreme Care!"

(4) Camp fire permits. These were used on one Forest in 1924, and apparently met the approval of the public generally. Most of our Supervisors, however, do not see the necessity of camp fire permits, and few of them favor such a plan.

(5) Smokers' sets. Some hundreds of smokers' sets were purchased at a cost of 16½¢ each. These are small receptacles for matches and tobacco leavings. The outside of the box carries a fire slogan. It is designed to be fastened onto the windshield or back of the seat of automobiles. These receptacles can be given away when automobiles are stopped in times of high hazard, in order to caution the drivers of hazardous conditions.

(6) A careful analysis of man-caused fires is being made to determine when and where they occur, and where those live who start them, and the amount of damage done, in order to plan the amount of money we can afford to spend in additional publicity work, and the region where the work should be done.

It is thought that in the above ways we have made material progress in reducing man-caused fires in the past couple of years.

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LIFT UP THE BUSHEL

By Paul G. Redington, Washington

The other night the Washington Section of the Society of American Foresters held a well attended session to hear something about "Forestry as an Investment" and those present heard some mighty good stuff - the kind that ought to be heard by or be made available to all those various interests who want to keep pace with what is happening in forestry on private lands. There is much of progress which is as a "light under the bushel" and the field men of the Service who are in the best position to know in considerable detail just what is doing will add materially to the value of the Service BULLETIN if they will disclose their knowledge to the Editor. Incidentally, the same admonition applies to the members of the Washington office. Don't be afraid to contribute any little thing if it adds to our real knowledge, technical or otherwise.

We are starting the ball rolling by publishing a chart which is self-explanatory.

"Go thou and do likewise."

Cost of Operating Trees of Different Sizes

Table 1 - Comparative Time for Felling Trees of Different Diameters

Diameter of tree Inches	Man capacity per day 10 hours, Board feet-mill cut	Time, man hours per 1,000 feet mill cut	
		Hours	Minutes
8	2,612	3	50
12	3,240	3	05
20	5,000	2	00

Table 2 - Comparative Time of Skidding Different Sizes of Logs - 1,000 feet with Overhead Skidders

Diameter of logs Inches	Board feet per load Mill Cut per Load	Time Required to Skid 1,000 feet b.m.
8	325	55 minutes
12	490	34 "
20	680	19 "

Table 3 - Loading Time for Logs of Different Sizes 16 ft. Long and Capacity per Car in board feet.

Average diameter of log at small end Inches	Loading time per M board feet	Board feet per car
10	29 minutes	1,150
12	19 "	1,580
16	10 "	2,420
20	7.1 "	3,220

Table 4 - Relative Time Required to Saw at Mill Pine Logs of Different Sizes - Band Mill

Diameter Inches	Time Required to Saw 1,000 feet b. m.	Relative Daily Capacity of Mill	Relative Sawing Cost per M B.M.
8	33 minutes	18,000	$4.71
12	22 "	27,000	3.48
16	17 "	35,000	2.61
20	15 "	40,000	2.12

Mr. G. P. Gammill, Manager of the Edgar Lumber Company of Wesson, Ark., made use of these tables about a year ago in fixing the size of logs to be cut by this mill, operating one band saw and one circular saw. He recently stated "We tested all of the tables in our woods and mill, operating a month at a time on different sized logs and were forced to conclude that Mr. Ashe was conservative in his figures.

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WASHINGTON NOTES

Mr. Struthers Burt had an illustrated article in the New York Times of April 18, entitled "Forest Ranger Plays an Epic Role." Mr. Burt has spent many years in the West and his portrayal of the work of the Forest Ranger was so in keeping with the facts as to lead Colonel Greeley to write the following letter:

"Dear Mr. Burt:

"I have just seen your article, "Forest Ranger Plays an Epic Role," which was published in the New York Times of April 18, 1926.

"It is heartening to appreciate that there are those who understand the Forest Ranger and his work. He is surely the "man behind the gun" in the organization. Locally, if he is an efficient officer, and we like to believe that the majority of our men are so classed, he does occupy a position of considerable importance and influence. He is the custodian of many square miles of valuable public property, and, as you have so well pointed out, his duties are many, varied, onerous, and at times fraught with danger. Work which is performed methodically and efficiently by him may comprehend incidents which to others would breathe of romance and heroism. And the others will be those to write about such things, not the Ranger, for my experience with him has led me to conclude that he shys away from anything which smacks of self-laudation.

"There are many stories to be wound around the life of this man, and as the years go by he will be the central figure in many tales.

"Thank you indeed for your written expression of his worth and for the implied compliment to the organization of which he is a member."

* * *

A Million Miles by Auto: Figures just compiled for the calendar year 1925 show that Forest Service Fords traversed 670,338 miles at an average cost of 6.1¢. There were 143 Fords (exclusive of worm drives) and they each ran an average of 4,688 miles. The Government Dodges (both touring cars and trucks) outdid the Fords by running at a cost of 5.3¢ per mile, but the total mileage was less - being 390,840. There were 61 Dodges in service and they averaged 6,407 miles apiece. Forest officers must have seen lots of country in this million miles.

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Forester Wanted: From July 10 to August 28 to handle forestry work at Camp Wauwepex for Boy Scouts on Deep Lake, Wading River, Long Island. There is a good salary attached, and the location is ideal. Here is a good chance for a forester to use his vacation having a splendid summer and at the same time to render a very good service. John B. Cuno of the Washington office would like to hear from every forester interested in this.

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YE EDITOR'S CORNER

One of our distant friends, in a geographical sense only, who after the manner of friends likes to take a shot at his friends, criticizes the contents of the SERVICE BULLETIN as follows: "Your 'Objectives and Plans of Research' is an excellent outline of Research objectives, but it is not the kind of stuff that makes the average F. O. Charleston with impatience until he can tear the cover off the BULLETIN and get to reading, and so on, and so on."

The critique is accepted in the spirit of good fellowship in which it is offered, but the Editor ventures to disagree with him. It seems to us that each and every member of the organization should want to know the various ports for which the good ship Forest Service is bound. Will it not give him a better perspective of his job and put him in a better position to do his bit, if he has the low-down on all branch objectives? That, at least, is the reason why these articles were sought for and published.

This is an opportunity to point out that the Editor's job is not one of selection of material alone. Far from it. His biggest job at present is to "try and get it."

However, things are very encouraging. Better stuff is beginning to appear, and we welcome such signs of interest as that of said distant friend. We are not so greatly concerned about what you say of the SERVICE BULLETIN as that you do say something. Mayhap you will later say something for it.

A plan that is being seriously considered is that of attaching a filler sheet to an early edition which could be torn off, filled in with your likes and dislikes and sent to Ye Editor for his guidance in selecting material for you to read.

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Don't fail to follow the articles on "Reduction of Man-Caused Fires." They tell you how others do it.

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Showing the Benefits of a College Education, on the Junior Forester Exam.

"There is much waist in hewen ties over sawn ties but they are considered to be better."

THE BLAZING FOREST
By Walt Mason

The forest was blazing with fury amazing, the smoke wreaths were drifting like clouds overhead; the ashes were flying and heroes were trying to conquer the fire fiend, the monster in red. Great trees that were standing when Noah was landing his arkload of flivvers on Ararat gray, were falling with crashes 'mid cinders and ashes - long centuries growing, and slain in a day. And farms that were smiling, and landscapes beguiling were ruined and wrecked in the space of a breath; and homes that were lowly and kirks that were holy were lost in the ashes and grayness of death.

"Oh, how was it started," I asked, heavy-hearted, of William the warden, who watches the woods: "Some campers were reckless, boneheaded and feckless, they scattered their stogies and similar goods. They slung around matches in dangerous batches, they broke up their camps without quenching the fires; the wardens and rangers admonish such strangers, who laugh while the forest burns up and expires. The trees that were waving when Aesop was slaving, the trees that were ancient when Caesar was young, must fall in disaster since campers won't master the lessons we wardens have ceaselessly sprung. The trees that were splendid! Their glory is ended, they'll whisper no more in the rush of the breeze; still campers will chatter and shout while they scatter their smoldering snipes in the woodlands and leas."

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"Priority" as Applied to Botanical Names was defined by an applicant for a Service position as follows:

> "Priority is the condition of coming before something else in an abstract manner, i. e., not a fact of material or objective reality arising before another but the conceptional assignment by man of a persistent relationship of the given fact to other facts, e. g., in importance, in historical origin, in weight, or in its concatenation with other facts."

With blue crayon poised in mid-air Mr. Brunhouse, the Civil Service representative, failed to make the grade but, after being assisted to Liggett's near-by drugstore, revived sufficiently to be escorted home.--W.A.D.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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CONCERNING "TECHNICIANS AND OTHERS"

By W. B. Greeley

That was considerable of a challenge which Messrs. Hutchins and Putnam flung to the four winds in the SERVICE BULLETIN for April 5. Being guilty of strong opinions and of their voluble expression on other occasions, I cannot refrain from entering the lists.

There is small profit, it seems to me, in trying to draw distinctions between "technical" and "practical" work on the National Forests. Graduates of the most advanced forest school in France lay out roads, build firebreaks, bring action against trespassing "moutons," and construct brush or rubble dams to check erosion - along with their management plans and intensive silviculture. It is all part of the day's work. And they had 300 years start of us in forestry.

Isn't it rather how we look at the pioneer jobs, the wood hewing and the water drawing? If we see them, not merely as something that has got to be done, but as part of the big job and the success of the big job, there is no place where you can draw a line and say that this or that is unworthy the attention and effort of the technical man. As a matter of fact, there is not a single activity of the Forest Service, call it "routine" or what you will, that does not challenge brain power, imagination, analytical capacity, and the urge to invent something better.

In the United States Army, you will find graduates of West Point testing the effect of different tannins on leather and finding out the right way to sew buttons on uniforms. There is a worthwhileness in all of these tasks if one is thinking, not in terms of leather or buttons, but of national defense. So is there a worthwhileness in every job on a National Forest, a worthwhileness for the best trained forester any university ever produced, if we think in terms of public forest administration.

On every hand are calls for that "search for truth" which the April 5th article sets up as the test of a science. Has any one of us ever worked on a big fire without mentally inventing all sorts of possible and impossible improvements in fire suppression technique? There is a field for all the Edisons and Newtons in the Service. Does not every timber sale challenge a man with timber farming instincts to find out something new about what trees are worth leaving in the stand, how windfall losses may be avoided, what is a good seed tree, what happens to advance reproduction, how groups of young timber should be thinned? Our Malheur friends have one of the biggest Forest Service sales about to begin. Have they not a real forester's job in getting that cutting done in the best possible way?

How often do we actually get satisfactory reproduction in those yellow pine stands of central Oregon? Why do the pine beetles break out, now and again, into epidemic pests? How can we clean our woods of timber-rotting fungi? How about this question of injury to reproduction from grazing, now so much to the fore? Do we know what is going on and why?

Our woods are full of questions of this sort, having to do with the production and harvesting of the most complex crop in the world. There is an appeal at every hand to the man of technical training or of timber farming instincts to search for the truth. I confess that it is hard for me to understand a viewpoint which says, in one and the same breath, that forestry is in the status today in which chemistry was in the time of the ancient Greeks, and that the sooner the trained man forgets all the forestry he ever learned the better off he will be.

Of course our forest management and our silviculture and our timber utilization are crude. They may indeed be "mongrel." All pioneering enterprises are crude, whether mining, agriculture, road building, or what not. These crudities are not going to be overcome by brilliant strokes of a pen or by ukases issued from Washington. Our forest practice of 25 years from now will be evolved from the contributions of thousands of field men, each searching for the truth in his own job.

I am not trying to whitewash the Forest Service as an organization, or its silvicultural policies, or its methods of dealing with men. There are imperfections enough. The mechanics of National Forest administration have doubtless been overstressed here and there. The man of scientific instincts has not always been given the sympathetic help that he should have. The real ends of National Forest administration may sometimes have been clouded by timber hewing and water drawing.

But none of these things can obscure the essential fact that our big job is the expert management of land with all the scientific skill we can muster for timber farming and range farming. If there has been any doubt on this score, or if it may have seemed a paper pronouncement not carried out in fact, the clear-cut program set forth by the conference at Denver last fall should set the matter at rest. We are committed to a management of physical resources, more and more expert, as the one fundamental and essential thing. We are committed to the steady advancement of the Forest Service in technical capacity, which means the ability of the individual field officer to deliver a better brand of timber farming and range management. Let there be no misunderstanding on that score. We are a human organization and a public organization. We are subject to tides and currents from one side or another. We may now and again unwisely tack ship. But the goal is there and it is not going to be changed.

There is a double responsibility in attaining that goal; first, the responsibility of the organization; and second, the responsibility of the individual member. The organization must see to it that the mechanics of day by day forest administration do not interfere with essential progress in managing physical resources. It is for the organization to secure, through recruiting and training, the men of capacity adequate to carry on steadily toward this great objective. It is for the organization to provide the stimulus for expert work and initiative by the individual Forest officer, the incentive to search for the truth. It is for the organization to select for the more responsible administrative positions men who have shown the capacity to be good managers of physical resources.

On the other hand, the responsibility resting upon the individual worker in the Forest Service is just as great. Everything we accomplish in the long run depends upon him. We want a lot of men to enter the Forest Service from the forest schools. We want the kind of training they have secured. We want the ability to search things out and to contribute to our technical advancement which such men should have in their mental make-up. These men must carry their part of the hurly-burly and sweat of the pioneering jobs which have to be done because they are a necessary part of the whole. But we want them to keep their insight into technical forestry keen and active, to use the opportunities around them for applying it, to dig into the whys and wherefores of forest management or silvicultural practice, to question, to show up things that are wrong, to demonstrate things that are better. That is the way in which forestry has been developed in every country. These men in the Service have the greatest opportunity for creative forestry that was ever offered in the history of the world. If they will do their part, they can trust the Service to do its part.

Here is a live subject. Sharpen your pencils and get into it.

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LEGAL TECHNICALITIES VS. REASON

By K. C. Kartchner, Apache

Except during the war, we have not been allowed to "crop share" ranger stations. We are told by our legal advisers that to do so has the effect of increasing an appropriation. However, this is not very satisfying to those of us that have to do with the financing of forage for ranger horses on the ground. I know of one instance where 30 acres in a ranger station have been farmed in the past and now would serve their highest purpose under cultivation. It is in the heart of one of the best small grain regions of the Southwest, and at average rates of yield one-half of this area would produce sufficient grain for at least four ranger stations, to supply which it now costs the Government around $500.00 per annum. A proposition was made by a resourceful farmer of the vicinity to furnish the seed, do all the work, and turn over one-half the yield in the ranger station bins, the ranger assuming no responsibility whatever and the only expense to the Government being for distribution, at very low cost, to the other three stations. At present, we are legally tied and must pass the proposition up. Cannot something be done to change the law or clear any other obstruction to a proposition so sane and sensible? We may as well argue that farming a station by furnishing seed and direct hiring of labor and implements increases the forage allotment in proportion as the forage produced exceeds that which could have been bought outright with the same money. An extraordinary crop of native forage on a ranger station increases the allotment in effect, because a saving in forage money is thus made possible. Take an allotment for any expenditure involving the enhancement of values. By the same token could it not be argued that it serves to increase the appropriation? In competition with private owners, the Government has entered the open field in forestry and other lines. Then why should it be so technical that it cannot utilize the productive possibilities of its own property for its own benefit? The direct purchase or hire of farm implements, hiring of labor, etc., has in most cases proved a failure for the reason that too much of the ranger's time is taken from administrative duties and too often just when planting, cultivating, or harvesting should be done men and teams are hard to get on account of like needs on private farms. It seems to me crop sharing is a subject our solicitors may well take up further to see if, after all, there is not some way in which it can be legalized.

YE EDITOR'S CORNER

Every so often we hear from a new writer. From some one who, if he has ever written for the SERVICE BULLETIN, wrote in that long ago time to which the memory of editors runneth not contrary. This time it is Zon of the Lake States Experiment Station. He has set up a pretty target to shoot at, which we will disclose next week. As we remarked in the last issue, the outlook is encouraging. Who knows but that some day we may receive a premeditated contribution from Pooler or Rutledge - or even Winslow of the Lab. It is said nothing is impossible.

WASHINGTON NOTES

The President has Signed the Agricultural Appropriation Bill. It contains increases as follows: $15,000 for Sanitation and Fire Protection, $47,980 for Silvical Investigations which includes establishment of the new California Experiment Station, along with $15,000 additional funds for the Appalachian Experiment Station, and $30,000 for administration of Military Reservations. The only real decrease was $5,900 for Lands.

Do These Figures Interest You?

% Cost of Activities - Forests Only - Salaries and G. E. App.

	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	Total
Overhead	37.7	50.5	48.3	44.2	35.5	37.0	39.0	56.0	41.4
Current Expenses	45.6	28.9	40.7	38.6	52.2	50.3	45.6	20.7	43.3
Construction of Improvements	6.6	5.1	3.8	5.1	3.5	4.6	6.5	3.6	5.0
Maintenance of Improvements	5.1	5.6	4.7	5.4	5.1	4.7	5.3	1.9	5.0
Development	4.6	7.9	1.8	6.2	3.1	2.7	3.5	13.7	4.5
Research	0.4	2.0	0.7	0.5	0.6	0.7	0.1	4.1	0.8
Total	100.	100.	100.	100.	100.	100.	100.	100.	100.

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When the Divorce? A recent press dispatch cites "Dr. Zon" as "formerly of the Forest Service, but now Director of the Lake States Forest Experiment Station." Now the "Arkansas (N.F.) Traveler," I mean "Outlook" in speaking of Junior Forester P. H. Bryan states that "while this is his first work in the Forest Service, he has been doing considerable work at one of the experiment stations" and that the experience gained will be very valuable to him in his work in the Forest Service. We like to see the kids grow up but never did have any use for this Lucy Stone League business.-- J.A.M.

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FOREST PRODUCTS LABORATORY

The Connecting Link: During the past few months correspondence has been had with District 2 about a utilization problem which their timber sale operators are facing. In general it is the same old question - what to do with the "low end" of the log. In the consuming centers big pieces of lumber are made into little pieces, while small-sized material that would answer the purpose goes to waste in the producing areas.

The production and sale of such material is apparently surrounded with all sorts of obstacles, and the idea of embarking on such a venture does not take readily among straight-line lumbermen. Yet there are cooperative agencies, in other lines, made up of small operators, handling their product successfully. Why not lumbermen?

The Laboratory has suggested a plan of attacking the question which would require a concentration plant for remanufacture, distribution, and sale of just such material.

The proposition needs further study before being unreservedly recommended. Therefore, to obtain data which would provide a sound basis for such a venture, we suggested that someone intimately familiar with the production side, either a man from District 2 or perhaps a man actually in business, join the Laboratory in a study of the consuming possibilities as we see them. We feel that a joint analysis and study of this character ought to point the way to a solution of the problem, if it is economically possible.--R.D.G.

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DISTRICT 1 - NORTHERN DISTRICT

"Nature is Wonderful" - Such was the comment of Federal Judge Geo. M. Bourquin of Montana after hearing the case of the United States vs. Bolyard, in which it was alleged that the defendant had unlawfully had in his possession a dead wild swan. The judge indulged in the above mentioned mild irony after he had patiently listened to testimony in which five Forest officers solemnly swore that to the best of their knowledge and belief the bird in question was, or had been, a wild swan. The defendant, a State Deputy Game Warden and a local trapper as solemnly swore that the same bird was a freak albino goose, the possession of which no law forbade. Stuffed specimens of wild geese, gray geese, and wild swan, borrowed from the museum of the University of Montana, were submitted by the United States as evidence of the improbability of a swan being erroneously mistaken for a goose. Unfortunately, the Forest officers in this case were guilty of an important technical omission in that they failed to seize the evidence on sight, and the defendant cheerfully admitted that he had long since dined on it with great gusto.

Judge Bourquin wisely ruled that when such eminent ornithological experts as Forest officers, game wardens, and old trappers were unable to furnish conclusive proof as to the identity of the strange creature then the doubt must perforce be resolved in favor of the defendant, whom he released forthwith. Moral - Grab your Swan before Your Goose is Cooked.

The Combat: Members of the Forest Service in Missoula to the number of about one hundred have been furnished free admission by the manager of the Bluebird Theater to "The Combat," a motion picture in which a forest fire forms the most thrilling feature. Those who have witnessed it say that it is a fine picture, and that the fire scene is good from the standpoint of technique. Of course, some of our fire experts found minor flaws, and are wondering what use was made of all the peaveys that were hauled out. It is understood Forest officers in D-5 directed this part of the picture, and on the whole they did a very good job of it.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

New Slide Lecture: The District office has a brand new lecture with slides ready for distribution. The author is Anna Laura Keplinger, aged 11 years. In recommending it, we have not the opinion of any critic or even any interested member of the Forest Service, but of one of the schools in Denver in which Miss Anna Laura, after giving the lecture twice, was asked to repeat it three times.

When you want to get something good for school use, pick out a good child speaker and order this new lecture on "Colorado Forests."--H.D.C.

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Banding Blue Herons on the Nebraska National Forest: It has been decided to band the great blue herons on the Nebraska National Forest, according to a letter recently received from the Chief of the Biological Survey. The bands are made of Monel metal and have a locking device. The data for the banded birds will be given to the Biological Survey on schedules furnished to the men doing the banding, for the purpose of studying the migrations of these birds. Returns have been received showing that they have been banded as far north as Minnesota and have been recovered in Mexico and Panama.

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Training Camp Opens: The annual training camp opened at Woodland Park May 3 with Mr. Keplinger in charge, Ranger Edward Wright of the Montezuma assisting, fourteen men in attendance.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Early Fires: An analysis made last winter of man-made fires on the fire Forests shows that an astonishingly large per cent of them start in the spring months - May and June - before the regular fire season is supposed to open. These fires usually burn in grass and sagebrush at low elevations near the Forest boundaries and cover large areas before they are controlled, owing to the class of cover which they burn and the fact that fire suppression forces are usually not yet fully organized. The damage is usually small, but the cost of suppression frequently mounts up quite high.

We need to impress the public with the necessity of care with fire at all times, even in the so-called "safe" times early in the season, as it appears that there is a lot more carelessness then than when everything is parched in the middle of the fire season.

Knowing that such fires are likely to occur at any time, preparations should be made for promptly tackling them, especially this year, when the fire season appears to be coming upon us at a very early date.

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American Forest Week: Imagine a little town nestled at the foot of a high red cliff, dotted with stunted cedars. Around its outskirts cling a few green fields, which stretch away a few miles down along the small stream which flows through town. No other town is in sight, except one little village marked with green trees that lies like a tiny oasis in a gray-green treeless desert. Far away to the south a low, flat-topped mountain rises. Except for the planted shade trees in the towns, not a tree, other than a few small cedars, is visible - a fine place to observe American Forest Week. Nevertheless, the Kaibab Forest reports a most excellent observance of the week at Kanab and Fredonia. Colored pictures with appropriate information were placed in store windows, special slides were used at the picture show, and talks were given at the schools of Fredonia and the Kanab High School. The L.D.S. Church planted a couple of blue spruce trees from the Kaibab Forest with impressive ceremonies on Saturday afternoon, in which the Boy Scouts and church officials participated with the Forest Service, and finally on Sunday night the Supervisor talked to the Young People's Mutual. And thus American Forest Week was observed on the Utah-Arizona line.

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"A news item a day makes forestry pay."

DISTRICT 5 - CALIFORNIA DISTRICT

Monument Design Selected: The committee of Alturas Parlor 159, Native Sons of the Golden West, in charge of the Modoc War Monument to be erected on the battlefield in the Modoc Lava Beds has selected the model designed by Paul J. Fair of the Forest Service, San Francisco. Surmounting a $4\frac{1}{2}$-foot base of lava rocks is the bronze figure of a charging grizzly bear, from a wound in whose shoulder protrudes an Indian arrow. This figure symbolizes California, attacked by the Indians, roused to fighting strength to quell its foes.

On the face of the lava base will be a bronze plaque with simple lettering dedicating the monument to the memory of General Edward R. S. Canby, U. S. A., and others whose lives were sacrificed on this battleground. The dedication and unveiling of this monument will take place early in June.

Movies on the San Bernardino: The Globe Picture Corporation, under the direction of Harry Garson, has just completed the filming of "Glennester of the Mounted," starring Lefty Flynn and Betty Flowers.

Practically all of the picture was made on the Arrowhead District of the San Bernardino Forest. A forest fire is the climax, and some very vivid and realistic fire scenes were taken. The company spent four days getting these scenes under the supervision of the Forest Service.

Garson has promised to give us some fire prevention publicity in this picture. He plans to mention the San Bernardino as the place where the fire scenes were taken, and to run the Service slogan, "Help Prevent Fires - It Pays." He also plans to put in a subtitle placing the blame for the fire on man's carelessness.--O.H.D.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

The "White Coal" of the Olympics is coming into its own. The Cushman Lake project of the City of Tacoma, on the north fork of the Skokomish, is nearly completed.

The Northwestern Power and Manufacturing Company has decided to start work at once in the construction of a dam and power plant on the Elwha River near Port Angeles.

The Grays Harbor Power & Light Company has completed plans for the construction of a dam and power plant on the Hoh River. The dam is three miles from the Forest boundary, and all the land to be flooded is in the State Land Exchange area. The dam will cause a lake to form about seven miles long and a mile and a quarter wide at places.--J.H.B.

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A Challenge: The Forest Supervisor of the Ochoco during a recent discussion with one of the old-time sheep permittees, was asked to herd sheep with the permittee for one week on his allotment, to determine the merits of the bedding-out system and also to arrive at the carrying capacity of the allotment. The Supervisor is thinking it over.--V.V.H.

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DISTRICT 8 - ALASKA DISTRICT

Logging Features in Southeastern Alaska: No small part of the logging operations in Southeastern Alaska is the booming and towing of logs to local markets. Log transportation is entirely by water, the logs being towed in flat rafts. Rafts are commonly towed over 100 miles and up to 200 miles to market. Some shore line on the Tongass National Forest can be logged only with caution during the calm weather of summer because of exposure to rough seas. A good navigator and prophet is able to tow logs without much difficulty, but occasionally a tow is caught in a storm and the logs lost. Last spring proved to be particularly disastrous to "West Coast" loggers as two large rafts were lost in storms. One raft broke up while attempting to round the south end of Prince of Wales Island, and a short time later another raft was lost in a storm while rounding the north end of the same island. A small per cent of these logs is salvaged by "Beach Combing."

Incidentally, large Davis-rafts occasionally break up in severe storms off the coast of British Columbia, and it is quite common to find Douglas fir logs on the beach in Southeastern Alaska, which were logged on Vancouver Island.--J.M.W.

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Will Redwood Flourish in Alaska? A recent copy of the "Redwood Reforester" says that "Redwood likes the fog belt." If so it ought to do well in Alaska; in fact, geologists have found fossil remains of Sequoia in the drainage of the Kuskokwim River in Western Alaska where this tree grew only a few millions of years ago. To test out the suitability of redwood to Alaskan conditions a few seedlings were secured from the Wind River Nursery and planted this spring at Juneau, Alaska, where their growth may be observed.

Some seedlings of Silver fir, Noble fir, yellow pine and Douglas fir were also secured and planted. Douglas fir has already been tried here for several years and appears to be growing satisfactorily.

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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. X, No. 21. Washington, D. C. May 31, 1926.

VALUE OF COST RECORDS TO ADMINISTRATION

By D. A. Shoemaker, D-3

At the outset let me say that I have but little faith and less hope in the value of a cost or expenditure record as an aid to National Forest administration, or as a basis for judging and comparing Forest Service efficiency. I hasten to explain that I know little about the general cost keeping of activities throughout the Service, but am basing my conclusions and this argument upon a rather close and thorough study and analysis of the limited and specific grazing reconnaissance appropriation.

It is understood that the Washington Offices of Accounts and Operation in cooperation with the Districts are attempting to work out methods of obtaining comparative unit costs that will be of value in administration.

Under present conditions there are two main reasons why, in my opinion, our records have little value for the above purpose; first, apparently, they do not show true actual expenditures on each of the various activities; second, our units are not comparable throughout the Service.

The first, undoubtedly, can be overcome. Apparently, however, some drastic changes will have to be made in our bookkeeping practices. As an example, I believe a fresh start would have to be made clear back to the distribution the Rangers make of their time. The D-6 Ranger is a fire man, the Utah Ranger a range man. If both should make the same field trip the D-6 man would charge more of his time to fire and less to grazing than the Utahan would. Of course, there is the argument that this charge is correct because the D-6 man would think more about and pay more attention to fire matters because fire is his big job. However, to avoid criticism he must show a lot of time on fire which would influence his activity distribution. Such records, then, have but little value in showing comparative actual expenditures because they are colored, one tint or another. Whether each man is giving attention to each activity in proportion to its proper priority can be determined only by inspection on the ground, where all the influencing and variable factors can be seen in one picture and each given its approximate proper weight.

The second reason cannot be overcome. If two manufacturing plants are turning out the same kind of a product - automobile tires of same size, weight, durability, etc., - from the same kind of raw materials, the relative unit production costs can be taken as a very definite criterion as to the comparative efficiency of the two plants. But in the Forest Service, neither the raw materials nor the finished product are the same, confining them even to one of our so-called units. The raw materials, topography, geography, climate, accessibility, and dozens of others are not the same on any two ranger districts let alone on two areas, one in water-soaked Washington and the other in arid Arizona. The product of our work is not the same or at least should not be; the survey of an acre of yellow pine timber on the Kaibab Plateau which probably won't be cut for 75 or 100 years should not be the same as for an acre on the Colorado Plateau which will be cut in 5 or 10 years; the lapsed get-away time on the asbestos Dixie need not be as short as on the inflammable Nezperce; the supervision of a cow on the good-condition, moderately-demanded, no-watershed range of the Custer isn't the same as the supervision of a cow on the overgrazed, intensely-used, important-watershed range of the Fishlake; a grazing permittee of the 2,600 on the Uinta is not the same as one of the 52 on the Tusayan.

How can these be reduced to a common denominator so costs of one will be at all comparable to costs of another?

I tried to do this with three grazing reconnaissance projects, one in each of three Districts, with the result that "cost per acre" does not mean a thing to me as a criterion either of comparative efficiency of the three crews or of comparative intensity and character of the work being done. Relatively high reconnaissance costs have been cited by some as an indication that the work was being done too detailed and intensive when, as a matter of fact, differences in influencing conditions were such that the more general and extensive work could easily cost the more. The job of obtaining reconnaissance data on an acre of the Rio Grande, with its good topographic and type map and relatively large types, is not comparable to that for an acre of the Minidoka with no maps and relatively small types. Why expect the costs per acre to be comparable? Probably also the problems are widely different, requiring different character of data as bases for their solution.

My plan is to inspect, for instance, each reconnaissance party, and if the Chief is well qualified, has good organization and planning, a capable crew that is working hard and doing work to the proper degree of detail and accuracy, I am satisfied without looking at his unit costs. His costs per acre may be two times those of another party but that is no sign of inefficiency or of too intensive work. If such comparisons are not feasible between three projects of similar nature of what value would they be in comparing the multiplicity of projects involving at least the 29 standard and major activity items?

There are special projects where expenditure records on a time basis for the different items may be of value in showing loopholes that may be plugged and "effective" time increased by easing up on some of the less important "ineffective" items. This value would be confined to the individual project and could not be used in an intelligent comparison with any other project even of similar nature.

Except those Service-wide expenditure records as may be needed for appropriation and allotment purposes I can see no justification for keeping them as a possible aid to administration or as a criterion for judging effieiency. I think we will eventually come to field inspection of the individual officer or project as the sole means of judging and increasing efficiency rather than by the present expenditure record method or a substitute cost keeping system.

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FOREST PROPAGANDA AND FORESTRY

By Raphael Zon, Lake States For. Exp. Sta.

If words would make trees grow, the United States would be the most thickly wooded country in the world. Women's clubs, Rotarians, Kiwanians, hundreds of Civic Clubs of every description, Waltonians, sportsmen, nature lovers, foresters, lumbermen, school teachers, newspapers, and lately even realtors throughout the length and breadth of the country are all talking forestry.

In spite of all this talk, our old forests are disappearing just as fast as before and even the second-growth is being cut into at a rapidly increasing rate. The fire situation shows only slight improvement and the acreage of idle land is increasing.

Why such divergence between words and action? When will public opinion reach such a saturation point that words will be precipitated into deeds?

The army of people who would rather talk forestry than practice forestry is increasing. Has the forestry movement, as it spread out, lost its depth and punch? Is this a natural process in a democracy before the people are moved to action or is the whole forestry movement going to degenerate into mere talk? Or is the forest profession lacking aggressive leadership which could convert sentiment into action? Is all well with our forest propaganda or are we foresters at fault in not knowing how to turn this widespread sentiment into real forest progress? And finding the practice of forestry beset with difficulties, do we yield ourselves to the temptation of mere talk? The situation needs a careful analysis. We are off either on our economics or . . . psychology.

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YE EDITOR'S CORNER

We call your attention to articles by Zon and Shoemaker and will be grievously disappointed if we do not receive many replies from you chaps. Concerning Zon's implications, there are doughty yeomen in this virile organization who can reply if they will. We will venture to make a tentative assignment of counsel as follows: "Hutch" for the refutation of the implied charge against our PR work, and either Forbes or Bates to reply to this invidious suggestion of bewilderment of the foresters. It is expressly understood and so stated that anyone may send a reply and be assured of a welcome for it. Possibly you can prove that Zon is the unenlightened one, although we think that will be difficult for you. Besides being a forester of note, he is as a matter of fact a splendid PR man.

We are for the dissemination of ideas in the SERVICE BULLETIN. For many of us the BULLETIN is our only place of meeting. Shake hands and fly at it.

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Have you noticed that D-3 allows each Forest to burn a certain acreage each year? The Coronado, for example, is permitted or allowed 2,280 acres. Does Roy Headley know about these goings-on? Somebody should look into this very reprehensible practice and put a stop to it.

* * *

WASHINGTON NOTES

How Come? Eighty nine eligibles for the Junior Forester register last year. This year only 38.

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A Gathering of Fundamentalists: Corking meeting at the Madison Lab. they say. Primarily a programme of work conference. They're going after fundamentals now, the feeling being that empirical research, at least in certain lines, has about reached its limit. How does liquid, i. e., moisture or preservative, go through wood? The correct answer will permit of application to all sorts of problems. What is the influence of growth conditions on the specific gravity of woods? You can, it seems, grow quality wood as well as quality fruit - if you understand growth conditions.

What is the rate of transmission of heat through wood? This is of value in wood preservation and kiln drying. All wood substance is the same, the extractives give to a species its individuality, therefore what are these extractives? What gives to cedar its property of resistance to decay?

Why are redwoods red? Why should the pines yield resin, and the oaks acid and not the reverse? And so on and so on. You see this Forest Service business is not finished when we have grown the trees.

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Near Silk: Millions of people wear "rayon" or cellulose silk, yet few know the difference between it and real silk, the Laboratory tells us.

"Rayon, formerly called artificial silk, is a soft pliable, multifilament textile fibre produced from some form of plant cellulose such as cotton or wood pulp. In the manufacturing process, the cellulose is dissolved to a viscous solution and forced through minute apertures corresponding to the spinnerets of the silk worm. The fine threads or filaments coming through these apertures are coagulated either in a fixing bath or by a process of evaporation, and several of them formed simultaneously are twisted into the strand or yarn for spinning.

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A Fine Showing: District 6 recently sent in a report on the showing of Motion Pictures as follows:

Film	Period of Use	Number of Persons Who Saw Film
Good Turns for our Forests	October 26-April 30	21,852
Forests Green or Forests Gray	" 26-March 1	4,885
Nature's Crop of White Pine	" 26- " 1	3,405
Around the West by Forest Roads	" 26- " 1	2,473
Grazing on the National Forests	" 26-Jan'y 11	2,550
National Bird Refuges	" 26-March 1	3,031
	Total	38,196

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FOREST PRODUCTS LABORATORY

Spruce was Used by Romans: A piece of wood from a barge or yacht of ancient Rome has recently been identified by the wood technologists of the Laboratory as a species of spruce. The specimen identified was recovered from Lake Nemi, near Rome. The timber from which it was taken is in the museum of the American Academy of Fine Arts at Rome, the identification being requested by an American friend of the director of that institution.

Microscopic examination of the fragment from the old yacht showed the presence of normal resin ducts, a circumstance which at once indicated that it must be either pine, spruce, larch, or Douglas fir. Other microscopic characteristics in the annual growth rings, which were still visible, fixed the identity of the wood as a species of spruce.

Lake Nemi, still famous for its beauty, was a fashionable resort of Roman nobles at the time of Caligula, about 40 A. D., as well as the site of an ancient temple of Diana, a fact which caused it to be called "the mirror of Diana."

It is probable that the yacht fragments recently recovered have been submerged for from 1,500 to 2,000 years. Several other ancient pleasure craft have been raised from the same lake. Two of these, now displayed in museums, are over 300 feet in length.

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Boxing and Crating Course: Representatives of machinery and hardware manufacturers predominate in the twenty-seventh short course in boxing and crating given May 10-15 at the Laboratory. Other industries represented were the box, electrical equipment, furniture, confectionery, glass, rubber and oil trades.

Nineteen men took the course. One was the thirteenth representative which his firm has sent to take the course, and two others were seventeenth and eighteenth from their firm to attend. The students' tuition fees of $100 each and their expenses for the week are paid by their employers.

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DISTRICT 1 - NORTHERN DISTRICT

The Fire Season of 1859: The following is an extract from a letter to Lieutenant John Mullan from P. M. Engle, one of the topographic engineers of the Military Road crew, written March 16, 1860, and referring to his explorations the preceding summer:

"July 31. Mr. Schon, myself and one Indian ascended today the mountain" (presumably Engle Mt. on divide between Coeur d'Alene and St. Joe Rivers), "but before reaching the summit we were convinced that we would have no distant view, and therefore retraced our steps. At one P.M. the smoke of the burning timber enveloped the whole country, and our Indian guide assured us that we would have no view until after a heavy rain. In returning the Indian set fire to the woods himself, and informed us that he did it with the view to destroy a certain kind of long moss, which is a parasite to the pine trees in this region, and which the deer feed on in the winter season. By burning this moss the deer are obliged to descend into the valleys for food, and thus they have a chance to kill them."--C. K. McH.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

Southwestern District Sets a High Fire Standard: A review of the following figures will give some idea of the fire job which the District has undertaken as its objective for the coming five-year period. Note the small acreage allowed each Forest for each year. One medium sized break means a total has been exceeded.

Forest	Allowable Area Burned Over Per Year			Forest
Apache	859	::	436	Lincoln
Carson	241	::	123	Manzano
Coconino	575	::	137	Prescott
Coronado	2280	::	279	Santa Fe
Crook	572	::	440	Sitgreaves
Datil	2273	::	415	Tonto
Gila	1310	::	150	Tusayan

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Fire Weather Warnings Meeting: Assistant District Forester C. B. Morse recently attended, at Portland, Oregon, a meeting of the Weather Bureau and forest protection associations of California, Oregon, Washington, Idaho, and Montana. There was a total attendance at the meeting of about 35 men.

Out of the new appropriation for fire weather warnings made to the Weather Bureau, $15,000 is allotted to the West. They plan on putting special men on this work to be paid from this appropriation - one at Portland, one at Seattle, and one at Spokane. These three men will be "leaders" in the fire weather warning work and investigative studies. They also plan on putting a man in a subordinate position under Major Bowie at San Francisco, to handle the general compilation work, etc., from the Weather Bureau district. It is expected that the salaries and expenses of these men, together with the necessary instruments which must be purchased for taking weather readings, will use up the entire $15,000 appropriation, but Professor Marvin has promised to give Local Forecaster Norquist at Boise an assistant, who will be paid from the regular Weather Bureau appropriation, to be used on fire study work, or rather to take care of other work and thus enable Norquist to devote considerable time to the fire study work himself.

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Clairvoyant Wanted: The Supply Depot gets many requests for curious things, but probably never before were the services of a clairvoyant more needed down there than following the receipt of a requisition the other day from another District, which requested a four-drawer vertical letter file finished to match the one in Room 410, Federal Building, Portland, Oregon. If any one can visualize it, Haynie would be very glad to know the particulars. (Personally all we have ever seen looked alike to us.)

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DISTRICT 5 - CALIFORNIA DISTRICT

A Model Ranger Station: I wish that it were possible for every field man in D-5 to visit the Big Rock Ranger Station on the Angeles Forest to see a station that compares favorably in neatness and appearance with the average oil service station. Here for 16 years Ranger Louis Dorr has held the fort, transferring a desert of rocks, sand, and sagebrush into a veritable oasis where the well-kept station buildings are shaded by trees and all enclosed in a fence that is in keeping with the rest of the place. Now, these buildings cost no more than on other average stations, but they always look neat, every tool and piece of equipment is in good repair and in its proper place, the blacksmith shop is as well kept as many forest offices, the barn looks like one at a model dairy, and there are no trash piles and old equipment littering the place. In fact, it is the kind of station Doctor Waugh says all should be, - a credit to the Service and a model for the local community.--L.A.B.

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The Understanding Heart: Have you read Peter B. Kyne's "glorious novel of the glorious forests," running under the above title as the lead story in COSMOPOLITAN for March? The scene is laid in the "San Dimas National Forest," Siskiyou County, California. A girl fire lookout, a Forest Ranger and an escaped convict are the leading lights of the first chapter. Of course, a lot of the "highbrows" in the Service will laugh at the characters and pick up all the little mistakes, but to have a man like Kyne, who is one of the most read authors of the day, write a Forest Ranger story will probably do more to bring the Forest Service before the American public than the combined lifelong efforts of his critics. Anyway, we believe "The Understanding Heart" is going to be a "corking yarn," and are willing to bet even-money that more than 10,000,000 people in the U. S. A. will read it.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

The Triple Alliance: Pioneering in a new field of cooperative fire prevention, a joint lecture tour was started in Oregon recently, sponsored by the Forest Service, the Oregon State Board of Forestry, and the Oregon Forest Fire Association. This represents the bringing together of the State, Federal and private protective agencies in a broad educational effort.

The Hon. W. V. Fuller, former cruiser, logger, and fire warden, three times member of the Oregon State Legislature, and Chairman of the Forestry Committee, represented the State. Geo. E. Griffith, of the Portland PR office, represented the Forest Service. The Oregon Forest Fire Association, which is the Oregon unit of the Western Forestry and Conservation Association, contributed a reel of motion pictures, made locally, especially for the campaign, and the latest model portable DeVry projector. Forest Service lantern slides and balopticon were used.

During the first five-weeks of the campaign 76 programs were put on, reaching an estimated total of 10,074 people. Seven counties were visited and programs were put on in smaller communities not usually reached, as well as doubtful zones and "sore spots." The evening program consisted of an introduction by some prominent local citizen, an address by Mr. Fuller, and an illustrated lecture by Mr. Griffith, closing with the motion pictures. Schools were visited during the day, and evening meetings held at churches, city halls, high school auditoriums, community buildings, etc. The "Scene-In-Action" showing a burning forest, was effectively used in advertising the evening meetings.

The keynote of the campaign was the importance of protecting young forest growth. The cooperative feature was also stressed. Timbermen, educators, Forest officers, and business men generally expressed the opinion that the campaign did a great deal of good.

Since the conclusion of the pioneer, or organization period, of the campaign, Mr. Griffith has returned to Portland, and Mr. Fuller is carrying on the work with the aid of local Forest officers and State wardens.

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DISTRICT 8 - ALASKA DISTRICT

Texas Creek Has Mineral Prospects: The Geological Survey recently made an examination of the mineral resources of Texas Creek at the extreme southern end of Alaska, where in 1921 the Forest Service started construction of a trail into hitherto inaccessible and entirely unprospected country. They state that the region is well mineralized. They report also that at the end of 1925 there were "27 prospects, comprising nearly a hundred claims on which work was done during the past season, and about 50 metalliferous veins have been discovered. x x x x Although the region as a whole has not been properly prospected several highly promising prospects have been found." One of these prospect owners shipped a trial order of 10 tons of ore which returned him $707.00 net after paying all expenses from Hyder, the Alaska shipping point.

Altogether this is a most satisfactory showing and the entire development has followed the construction of the Forest Service trail into the region. Incidentally it might be stated that Texas Creek is within ten miles of the Premier Mine, which is probably the most profitable mine which has been developed in the north country during recent years. The question now is: Will one of these prospects add another chapter to Alaska's story of mineral production?--M.L.M.

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WHERE IS OUR YELLOW PINE?

It is generally recognized, I believe, that in the West the biggest single forest insect control problem just now is that of Dendroctonus infestations in western yellow pine. It may be of interest, therefore, to know something of the distribution of this beetle-troubled species in the Rocky Mountain and Pacific Coast regions.

According to the latest figures, the western yellow pine stand (*Pinus ponderosa*), including *all* classes of ownership, is as follows, in billions of board feet: California 77, Oregon 76, Idaho 17, Washington 14, Montana 10, Nevada, Utah, Colorado, Arizona, and New Mexico 39; total 233 billion board feet.

The Pacific Coast region (California, Oregon, and Washington) therefore, has 167 billion board feet of western yellow pine and the Rocky Mountain states have 66 billion board feet of the same species.

California and Oregon have two-thirds of the western yellow pine stand of the nation within their fair borders. The California stand slightly exceeds that of Oregon, but if the 13 billion board feet of Jeffrey pine are included, California's claim to first place cannot be disputed.

The British Columbia yellow pine stand is four billion board feet, only one per cent of the total stand of timber in the province.--A.J.J., Entomologist's News Letter.

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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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TRAIL MARKERS

By James R. Ahl, White River

Some months ago an article by Ranger Read appeared in the D-2 Bulletin, advocating the use of a small metal trail marker instead of the standard Service Blaze. I believe this is a good idea, for the following reasons:

1. The markers can be made of metal, enameled or painted white, in large quantities at slight expense. They can be made to be put in place with two nails at most, and perhaps one. The marks designating a Service trail will then be absolutely of one pattern, all Service trails will be marked alike and be known as such.

2. They can be fastened in place more quickly and easily than a neat standard blaze can be made.

3. There is no defacement of the tree.

4. All of us have constructed trails over routes that have been blazed with unsightly, non-standard blazes years before, and know the difficulty of putting the standard blaze on, under such circumstances, and making a neat job of it. Our efforts simply result in butchering up the trees worse than ever. A neat metal marker would be better.

5. Most important of all; - The location of a trail may be changed (as is often necessary) and trails may be abandoned, without leaving a confusing conglomeration of standard blazes marking different routes, and trails that are no longer used. The markers on the old route or the abandoned trail may simply be removed without leaving any trace.

6. The use of such a marker would afford us a more distinctive trail sign than any blaze.

I am submitting no design for consideration, but it seems to me that a piece of metal, preferably white, the size and shape of the "shield stickers," pierced with two nail holes, would answer the purpose.

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Trail markers are used extensively in the Adirondacks. They have an additional advantage not mentioned by Ranger Ahl. Trunk trails are marked with markers of different colors, so that you always know a blue marker means a certain trail, a red marker another, etc. The different colors are also designated on the map. This system gives the traveler freedom from worrying about being on the wrong trail, and also reduces the use of guide boards, since the marker is itself a guide.

The markers show up farther ahead than old blazes, which adds to the ease of traveling.

I move we abandon trail blazing! The average blazer (especially if he is very young) gets overenthusiastic with the ax and makes large unsightly scars on the trees. Opening the bark of living trees invites disease and insects. There are already too many blazes in the woods that confuse the seeker of legitimate survey blazes. The use of blazing to mark temporary lines (such as sample plots, temporary surveys and locations, etc.) should, of course, be taboo.--Ward Shepard, Washington.

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FIRE VS. GRAZING

By Fred Winn, Coronado

"A bad fire occurred on an area where the lack of grazing had allowed an extensive accumulation of grass but in a country where there is a demand for range of another class."

The quotation is taken from a recent fire review circular on the 1925 fire season on the Southwestern District. Unfortunately, the writer is intimately acquainted with the area and fire in question and withal has made a close study of Hatton's able Bulletin "Livestock Grazing as a Factor in Fire Protection on the National Forests."

The protest is directed to the inference that since there was a "demand for range of another class......" i. e., sheep or goats in place of cattle, the demand should have been met in order to reduce the fire hazard. The cover on the burned area was predominantly a yellow pine and subalpine stand with some browse on the lower and exposed southern slopes and all within an area of very high watershed value. Are we so soon to forget Pearson's findings on sheep grazing as to permit sheep (or goats) on range of such a character in order to reduce the fire hazard? Remember that

Pearson has said: "One of the fallacies which has been pointed out by the present and past experiments is that grazing damage can be controlled after the damage becomes evident. When damage begins to show up sufficiently to arouse administrative action, it is too late to obtain control."

Granted we had one bad fire in ten years, or in a generation, with a correspondingly high damage and high cost, the fact remains that double the damage to the forest would occur, to say nothing of the erosion problem, if the class of stock was altered simply to meet an acknowledged fire hazard. With all the knowledge we have accumulated on damage by sheep grazing in the yellow pine and bunch grass type, the solution would not be in allowing sheep to graze on an area of this sort but in providing for proper distribution of cattle on the range in question, in order to reduce the hazard from fire. Any such distribution, in a rough and precipitous range, implies range improvements and water development, both of which require funds and time. In the past few years the funds have been woefully lacking.

Old-timers still speak of the forest fires which were caused by lightning or were set by Indians in the pioneer days, before domestic stock were placed in overwhelming numbers on the ranges in the White Mountains in Arizona or in the Mogollon Mountains in New Mexico. We have ample evidence of such fires, but none of them, from whatever cause, have been so disastrous to forest growth or have caused such excessive erosion as overgrazing by domestic stock, and especially one class of stock. A few years ago, a prominent member of the Service, now holding a high position, was riding over this very area with the writer, and, in the discussion bearing on this very problem of the "accumulation of grass" and the consequent fire hazard, remarked:

"For Heaven's sake, above all, don't throw this area into a sheep or goat grazing allotment. We may have fires but the solution in my opinion is to strengthen our protective system and secure range improvements to hold cattle on the allotment and so stop the fires, but sheep, once in here, will cause ten times the possible fire damage."

What is the matter with our advanced intelligentsia? Are we not all expected to be absorbing the high-brow complex and putting our technical knowledge into practice? Along comes some hoplite who may or may not have been present at the fire, spends a day or a day and a half on the ground, prepares an erudite memorandum on the subject and utterly ignores seven or eight years effort of the men on the ground (who presumably ought to have an intelligent knowledge of local conditions) and who have attempted for years to reduce or entirely exclude the very class of stock in question because of the timber and watershed values. One might as well try to make a whistle out of a pig's tail as to try and profit from our studies, if snap judgment such as this is to govern. All animadversions will be received in good part, but the opinions expressed, go! If we intend to put our findings as to sheep and goat grazing into effect - findings which have cost years of time and effort - we can scarcely afford to meet the "demand for range of another class" simply because of a serious fire.

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GAME PATROL

By B. W. Clark, Gallatin

The so-called Northern Elk Herd, estimated to contain from 8,000 to 17,500 head of elk, depending on the organization making the estimate, has for its summer range vast areas in Yellowstone National Park. In the fall and winter these elk drift out of the Park onto winter ranges on the head of the Yellowstone and Gallatin Rivers in the Absaroka and Gallatin National Forests.

The winter range on the Yellowstone consists mainly of a small amount of public domain and private lands, from Gardiner to Yankee Jim Canyon, and higher, less accessible range in the two National Forests, adjoining this area on the east and west, which has been reserved for winter elk range. Also, a large area is reserved north of the Park, on Slough and Hell-roaring Creeks in the Absaroka Forest, which because of its elevation cannot be used to advantage by the elk for winter range. During winters of severe climatic conditions and excessive snowfall, the main portion of the Yellowstone herd of necessity congregates on the small area from Gardiner north approximately 17 miles to Yankee Jim Canyon and often farther down the Yellowstone River, which at best supports only a small amount of winter forage. This results, during severe seasons, in loss of animals through starvation and injury, and damage to ranchers' haystacks and fences. The inhabitants of this winter range lying outside the Forests, naturally resent these depredations, and are not overly enthusiastic toward the preservation of this herd.

When the elk drift out of the Park, on the head of the Gallatin River, they go directly into the Gallatin State Game Preserve, and adjoining areas in the Gallatin National Forest, which are entirely reserved for winter elk range. This area supports an abundance of forage for the elk that use this range.

During the winter of 1915-16, subsequent to the close of the regular hunting season, approximately 500 head of elk were illegally killed on the area from Yankee Jim Canyon south to Gardiner; bulls were shot for their teeth, and cows and calves killed just to see them fall or to try out marksmanship. In addition to this, from 50 to 100 bulls were killed in the Gallatin Game Preserve for their teeth. Since no previous record was kept of the illegal kill of other years in the same territory, no data are available, but it is believed that the figures given represent an abnormal kill.

The protection of this northern elk herd, after they leave the Park, is primarily the function of the State Game Department, but since it took no aggressive action in the matter, the District Forester approved the initiation of a systematic patrol of the areas used by elk in winter on the two Forests and adjoining areas, beginning with the season of 1916. As stated, previous to the establishment of the patrol the illegal kill was as high as 500 head of elk - during the period since the initiation of the patrol, winter of 1916-17 to date, this kill has been reduced to practically nothing at the present time.

During the early years of the established patrol, the main object was the elimination of the tooth hunter. This illegal killing of elk has been practically eliminated, but the killers are still with us, and it is necessary to maintain the patrol. In addition to protecting the game animals, the patrol now is making a study of the habits of the game animals; seasonal use of the range, including kinds of forage consumed; better utilization of range through salting, effect of climatic conditions on the use of the range, diseases, parasites, such as wood ticks, etc.

On the head of the Gallatin, an ideal winter elk range is available and is set aside for the perpetuation of this portion of the northern herd. More elk can be taken care of on the Gallatin range than are using it now - it may be possible to divert a portion of the drift from the Yellowstone to the head of the Gallatin. On the Yellowstone the opposite is true - there are too many game animals for the forage at present available during severe winters. A bill has been prepared, is being sponsored by the agencies interested, and has been introduced in the present Congress to add to the Absaroka and Gallatin Forests the area outside the present forest boundaries on the Yellowstone. If this bill passes it will simplify the administration of this winter elk range, will enlarge this range through the purchase of private holdings, and will eventually eliminate the ranchers' grievances.

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COSTS AND USE OF MONEY

SOME FIELD REACTIONS

By F. H. Eyre, Wasatch

To begin with, it is agreed that there is need for an analysis of activity costs. Just how this should be made is a different matter. There is danger that the system of cost keeping may become inflated to such an extent that the means may cost more than the end. Let's keep the cost of the system to the minimum and make sure we get results on the ground.

Public Relations work, it is pretty much agreed, is a means to an end. If that is true, certainly it is directly chargeable against some regular activity. If it has no purpose, why not annual leave?

To split up some of the larger headings merely to camouflage the fact that fire and improvement work costs us money defeats the purpose of the analysis. Likewise an effort to distribute overhead charges directly to different activities covers up something which we want to know. Why not direct our efforts toward cutting down instead of covering up this overhead?

It is no more than right that the Ranger should carry the burden of cost keeping as he is the one who does the work on the ground. Let the Supervisor content himself with seeing that the work on the ground, as well as the distribution of time, is done right.

To change the statistical report to July would only be another stumbling block in the way of the Supervisor in the middle of the field season. The number of Forest Clerks who can prepare this report without help from the Supervisor, Deputy or Ranger, is indeed few. It is granted that F. Y. and C. Y. records are difficult to compare. Would it not be possible for Accounts to split their totals in January and July and compile cost figures for the calendar year? Let's leave the bookkeeping for the accountants and the field work for foresters.

Cost keeping, to be of real help, should be by ranger districts. Otherwise the figures are buried too deep for us. A drive to cut the cost of one activity only tends to boost another, unless from our study we learn that a Ranger may be able to take on more territory or get along with less help and then take action accordingly.

"The Service has not sold to the field." Is it any wonder, when such an attitude is taken? It makes a field man feel he is not a part of the Service and makes him antagonistic at once. Why say more?

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MUNICIPAL CAMPS IN CALIFORNIA'S FORESTS

By L. A. Barrett, D-5

From time to time short items have appeared in this BULLETIN relative to the Municipal Recreation Camps in the National Forests of California.

This year we have collected some statistical information about these camps that may be of interest to the Service as a whole, since it is the belief that camps of this character will gradually spread all over the West.

At the present time there are 15 of these camps operating or projected; 14 of them are under permit from the Forest Service. The San Francisco camp, being on land owned by the city, is not included in the following figures. Of the 11 camps operated on Forest land last year, 4 are maintained by Los Angeles, 2 each by Oakland and Berkeley, and one each by Sacramento, Stockton, and Riverside. The average area in each permit is about 50 acres. The estimated value of the improvements on the 11 camps is $242,871, an average value of $22,078.

During the season of 1925 these 11 camps accommodated 8,410 guests, an average of 765 to each camp. Subsistence expenses ranged from $1 to $1.28 per day at all except the High Sierra Camp of Los Angeles on the Inyo Forest, where this expense was $2.07 per day. The average subsistence cost was $1.20 per day. So the average 2 weeks outing at these camps cost only about $16.00, plus transportation.

That the camps figure very close is disclosed by the fact that the profits of the 11 camps were only $7,525, or less than $1 for each guest whose average stay was about two weeks.

One of the "talking points" for the Sacramento Municipal Camp is so applicable to all of them that I quote it herewith:

"Among the outstanding features of the camp project is that the money spent by vacationists does not flow out of Sacramento, but is spent among Sacramento merchants; also, it has been pointed out, that if Sacramento people went to other places, probably twice or three times the amount of money would have been spent away from this city."

Needless to say, we are watching with interest the constant develõpment of this new feature in recreational use of National Forest land.

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A MILLION DOLLARS

By F. E. Ames, D-6

The Pelican Bay Lumber Company of Klamath Falls has completed its fourteenth year of logging on the Crater National Forest, and its payments to the Government for timber cut amount to a little over one million dollars. The company purchased 103 million feet of yellow pine, Douglas fir, and other species in 1911 and followed this in 1915 with a purchase of 382 million. Cutting has been in progress every year since 1911, and at the close of the 1925 season the cut was over 279 million of pine and 19 million of other species.

This company was organized primarily to log National Forest timber, but has in the last few years also cut some Indian Reservation and private timber. The company's mill has burned twice. The present mill, constructed in 1919, is a high-class unit of 150 M daily capacity, single shift.

The ownership and management of the company has remained the same from the beginning. Relations between the company and the Forest Service have been cordial and difficulties have been adjusted in a businesslike manner. Is not this record something of an answer to those who say it is impossible to do business with the Government?

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"GROWING TIMBER PAYS - PREVENT FOREST FIRES"

By James E. Scott, D-7

The Editor of this interesting publication declared in the March 1 issue that "Grow Trees - It Pays. Prevent Forest Fires" was or is to be our new slogan. He also carelessly asked "What do you think of it?" I think it will help to muddle the public mind a lot - people will confuse us a little more with the American Tree Association and other tree agencies - we'll get a lot more letters about shade trees and ornamentals on which the B.P.I. or other outfits could give much better service - and it will be just a little harder for people generally to see the woods because of the trees.

Just to be constructive, I have written two other and shorter slogans. "Growing Timber Pays - Prevent Fires," or "Forests are Wealth - Prevent Fires." In the last analysis, as Roger Babson might say, people will stop burning the woods when they become convinced that the woods represent real money values. As a first step toward conviction let's start telling them, repeating, and steadily proving that "Forests are Wealth." At the same time let's grow "timber" instead of "trees."

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HAS DAVY JONES TURNED FORESTER?

By H. J. Lutz, Chugach

If we are to judge by the evidence shown at many places on the Chugach the answer must be in the affirmative. It is clearly evident that the Prince William Sound district is slowly becoming smaller due to insidious eliminations which are gradually being effected, not in a legal way but by nature.

When Vancouver visited Prince William Sound in 1793 he reported that in many places the shore line had been sinking noticeably. He believed that this sinking had been more or less a sudden movement, occurring between 1783 and 1793.

Since that time this general sinking movement has been in progress for over 130 years. Little by little the waters of the north Pacific have encroached on the wooded shores of Prince William Sound. At Snug Corner Cove where Meares laid in 1786 very old cutting is in evidence; some of the old stumps from 10-12' out from the present high-tide line still show ax marks. Along the shores of this same cove a peculiar sponginess of the beach was noticed and an examination showed that the shallow veneer of beach gravel was underlain with extensive peat deposits, out to a distance of over 100 feet from the present high-tide line.

On Matague Island, one of the largest on Prince William Sound, the coast is also seen to be sinking. There giant Sitka spruce stumps are found far out from high-tide line. At low tide a veritable forest of stumps is exposed in places.

If nature continues to "eliminate" portions of the Chugach along the coast we will soon have to enlist the aid of the geologists to check the action or else face the possibility of being stewards of a submarine forest.

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WE FOREGATHER

Doubtless the Districts are very pleasant places in which to live, but so is Washington. We are the only Federal Capital City in the U. S. We have the only White House with its distinguished occupant, the only Cabinet Officers, the only Supreme Court, and we have Senators and Congressmen till we can't rest. If, then, you add to our wonderful climate the annual Forest Service smoker, you'll have the last word in things nice about Washington. It occurred Monday, May 24, under the auspices of the Society of American Foresters, and here's the program:

(1) Piano solo. (2) Singing of the "Moving Song" by the Nonpareil Consolidated Double Quartette. (3) Reading of telegram beseeching us to find a Secretary for the Society and reciting desired qualifications and salary to be paid. (4) Singing of the song "Prevent Forest Fires" by the Nonpareil Consolidated Double Quartette. (5) Trial of W. G. Freeley, charged with not being a forester. (6) Piano solo. (7) Singing of "I'll Be Happy" by Nonpareil Consolidated Double Quartette, which had to do with expense items. (8) Cartoons of notables present by Mr. Frank Mackenzie, who is painting the backgrounds for the F. S. Sesqui-Centennial Exhibit. (9) Singing of "Sweet Adeline" by all present, including good singers and those who are perhaps better listeners. It was good, amigos.

A luncheon was served, and while we ate we visited. There were sandwiches and coffee, ice cream, and 0.0075 beer, the latter obviously intended for those with tenacious memories.

Sung to the tune of "Tommy," the "Moving Song" expressed delightfully the various sentiments aroused during the late uprooting process conducted by the Branch of Operation. For example, the first verse bade us -

Come listen all ye Service men while I a tale relate
Of how we changed the offices without incurring hate.
It was a fearful, tearful task and now the deed is done
There is no sign of jealousy. We're crowded every one.

And another consolatory verse counselled as follows:

> So if you are not happy. If your quarters cramp your style,
> If you knock knees with your neighbor. Just wear a cheerful smile.
> For there are many others, much tried souls but true
> Who are just as sore as you are and would gladly change with you.

Serious charges were laid against the man Freeley by, as it developed, incompetent witnesses. He was charged with being a stockman, a real estate operator, with running a tourist bureau, with refusing to accept new ideas, but Chief Justice Barnes of the U. S. F. S. Supreme Court ruled that the evidence did not support the charges and that he was a darn good Forester, which is certainly not lovely legal language for learned lawyers. This judge manifestly embarrassed the witness who charged poor reception of new ideas, by asking witness if he, said witness, had ever had a new idea. Fancy! He, the witness, was hard put to recall one.

Attorney for Prosecution M. H. Wolff, Missoula, Montana.

Among the distinguished present, i. e., besides members of the Forest Service, were Director Warburton of the Department Extension Service, Colonel Ahern, John T. Caine, 3rd, Head of Packers' and Stockyards' Administration in the Department, Axel Oxholm, R. C. Staebner, Ex-Forest Service man, Arthur Ringland, O. M. Butler, and our own Forest Service Product Congressman Leavitt from Montana.

It was a very happy evening, and we wish you all could have been there with us. Some time when you're down our way drop in and we'll have the Nonpareil Consolidated Double Quartette sing for you. They are good, amigos, muy bueno.

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YE EDITOR'S CORNER

Just room enough this week to say that there isn't room enough to say anything.

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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. X, No. 23. Washington, D. C. June 14, 1926.

GOVERNMENT LOSES FIRST ROUND IN KAIBAB DEER CASE

By Will C. Barnes, Washington

A wire received from Mr. Williams, Solicitor of the Department, who went to Los Angeles to argue the Kaibab deer case before a Federal Court of Equity, states that the court on opening announced that it had read the bill and affidavits together with the brief filed by the Department and had decided a temporary injunction would not be granted. The court expressed the thought that the Government had a right to kill the deer if necessity for such action could be shown but has no right to authorize the removal of the carcasses through any part of Arizona or to permit persons to hunt without a State license.

The Solicitor then asked to be heard on the proposition of Government ownership of the deer as well as the question of protecting the forest, which, if sustained, would tend to alter the court's decision. This was granted, the Attorney General of Arizona also speaking.

The court indicated that the issues involved were too grave and complex to warrant issuance of the temporary injunction, but at the time the wire was sent had not announced a final decision.

The United States Attorney at Los Angeles has asked the Attorney General of the United States for authority to appeal the case in the event it goes against us.

This hearing was brought by the United States Government against Governor Hunt of Arizona, the State Game Warden, and Coconino county officials to determine the status of the herd of deer in the Grand Canyon National Game Preserve, a part of the Kaibab National Forest.

The Court of Equity was composed of Judge Erskine Ross of San Francisco, Judge of the Federal Circuit Court of Appeals;Judge Fred C. Jacobs, District Federal Judge in Arizona, and a third Federal Judge to be chosen prior to the opening of the hearing.

The State of Arizona contends that it has title to all wild life in the State, whether on Government lands or upon Government game preserves or within the boundaries of the National Forests. The Forest Service maintains among other things that the act of Congress establishing the Grand Canyon Game Preserve expressly granted the Secretary of Agriculture full authority to "regulate the hunting, trapping, killing, or capturing of game animals upon the lands of the United States within the limits of such game preserve."

In 1924 the Arizona State Game Warden and the Forest Service entered into an agreement to the effect that the Kaibab Forest would be thrown open to all hunters either local or of other States upon payment of a fee to the Government. Under the agreement the hunters were to be allowed to kill three head of deer each, with or without horns, and to pay the Government $5 a head for each deer killed, of which sum $1.25 was to go to the State, the balance being used by the Government for expenses in handling the hunting. Hunting was to be allowed in the Forest during the 60 days' period starting October 1, and ending November 30, 1925.

Governor Hunt, however, finally interfered in the case and directed the State Game Warden to allow hunting only under the Arizona State law, which is during the month of October, each hunter to kill only one deer with horns; non-resident hunters to pay the usual non-resident hunting fee of $20, while resident hunters were to pay the regular State hunting license fee, $1.25.

The Federal petition states that there are 722,464 acres in the Grand Canyon National Game Preserve, and that due to the increasing size of the herd of deer, between 40,000 and 50,000 head, the Forest is in danger of being destroyed because of lack of feed for the herd which causes the animals to feed on the young trees and the low hanging boughs in the Forest, so that at present the reforestation has practically ceased.

It is necessary, the petition claims, to remove at least 10,000 head of the deer at once. The petition points out that in December 1924, George McCormick under a permit issued to the State Game Warden, attempted to drive 5,000 head of the deer over the river; but the attempt ended in failure. Ordinary hunting during a single month will not remove enough animals to meet the needs of reduction in the deer. The petition points out that due to lack of feed only about 10% of the 1924 fawn crop lived. These died of starvation as did many of the older ones.

The case was argued on behalf of Arizona before the Court of Equity by Attorney General John Murphy and County Attorney Frank Harrison of Coconino County, while Solicitor Williams of the Department of Agriculture and the United States District Attorney for southern California represented the Government.

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ACTIVITY COSTS AS INDICATORS

By Joseph C. Kircher, Washington

There is a Forest in the West whose direct timber sale costs are 35¢ per thousand above the District average and whose direct grazing costs are 5¢ above the District average. If these were reduced to the District average the saving would be $2,604. Provided sale and grazing costs could be reduced to the District average by better management without loss in quality of work what could be accomplished? The $2,604 saved might be used to get more intensive administration of these activities or the time which this money represents might presumably be put in on some of the many things we "alibi" out of on the lack-of-time excuse. Or how about dropping one Ranger and combining districts so as to make bigger jobs. The Forest in question now has ranger districts far below the average size for the Service and even if they were reduced by 1, they would still lack some 40,000 acres of coming up to the average. Wouldn't it be fine to have this cash to employ another Junior Forester for management plan work or to estimate some of those stands we have been wanting to find out about for many years?

But you say, conditions are such on this Forest that these costs must be approximately that much higher than the District average to maintain quality. Maybe so, but can you prove it? Are you sure that the men are practicing progressive travel to the limit, or that they are not making too much of a job handling these activities? Are you satisfied that you can't improve their methods? Can you explain why sale costs varied 33¢ in the past three years when the annual cut was nearly the same or why grazing costs varied 11¢ in the past 4 years, although there was not much difference in the number of cows that ate the grass?

Suppose we take another Forest. This one spends 3 times as much per cow and 83% more per thousand feet than the District average. It therefore costs $5,929 more to handle these activities than it would have if the costs had been brought to the District average. This Forest probably can't get down there and handle the work as it should be handled, but there is plenty of room for a reduction in cost without getting anywhere near the average. It might be added that this fellow's next door neighbor who has a territory of a similar kind although he cuts a good deal more timber, can handle his sales for just one half the cost per thousand feet and his grazing for just a little over 1/2 the cost per cow.

Again here are two Forests in the same District with approximately the same number of special uses to handle, yet one spends over twice as much as the other in doing the work.

There are many other apparent inconsistencies which a close study of the activity cost figures will bring out. It is not contended, of course, that unit costs can be equalized on all Forests, but it is believed that the cost figures will indicate many places where changes in organization or method may with profit be considered in the interests of better quality of work or higher efficiency of performance.

The difficulty of using the cost figures as an accurate gauge of performance is that there are no cost standards by which to steer. It is of importance therefore that such standards be developed, but pending their determination it is not at all impossible to make exceedingly effective use of the cost figures as indicators of defects in the efficient management of the National Forest resources.

WOODSMAN SPARE THAT TREE!

By M. Westveld, Northeastern Exp. Sta.

The woodsman's ax is a weapon for both good and evil. In a study of damage to young growing stock through the logging of spruce lands the Northeastern Forest Experiment Station has found that a great amount of young growing stock is needlessly cut down in the process of logging.

Ordinarily a considerable amount of reproduction ranging from 6 inches upward in height is present in the spruce forests of the Northeast. This young stand represents the basis of the next crop of timber, and if well stocked, clean limbed stands are to be obtained for the future it is essential to keep logging damage down to a minimum.

The study was conducted in spruce stands containing about equal amounts of conifers and hardwoods. Timberland owners in this region are anxious to maintain, and, if possible, increase the percentage representation of spruce and fir. This is most difficult of accomplishment because of the aggressive characteristics of the incoming young hardwoods which compete so strenuously for a position in the new stand.

The highest logging damage was noted in the 2 to 5-ft. height classes, where approximately 25% of the individuals comprising these classes was destroyed. Loss in these classes is a very serious matter, since a type of young growth is represented of sufficient height to compete successfully with the invading hardwoods for a permanent position in the next crop. The swamper's ax also accounts for the removal of 44% of the unmerchantable hardwoods of the higher sized classes. This is a direct benefit to the young coniferous stand, since the competition resulting from the rank growth of hardwoods seriously retards the development of young spruce and fir.

When the lumberman realizes that it takes from 15 to 20 years for a spruce to reach even the height of 5 feet, and that it is on this class of young growth that he must pin his faith for a new crop of timber, he will develop less destructive methods of logging and will caution his woodsmen to use discrimination in testing the keenness of their ax blades.

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PULP AND PAPER

By C. E. Curran, Forest Products Laboratory

Data on white water losses were obtained through a survey conducted in cooperation with a modern mill manufacturing sulphite and modified soda pulp, and a variety of papers including drawing, writing, book, label, kraft wrapping papers, and offset specialities. The loss of usable fiber in the sulphite mill was found to be 3.27 per cent of the production, while the soda mill losses averaged around 2.5 per cent. The monetary loss involved was $86 and $50 per day, respectively, or a total of $136 daily for the pulp making departments. In the paper mill the average fiber loss for the three machines was found to be 4.65 per cent of the production, with a monetary value of $125 per day. The total money loss of the whole mill is, therefore, $251 per day.

While this loss can be reduced by appropriate pulp saving devices, the survey disclosed that the amount of water being used was larger than necessary, the following averages being determined:

Water used per ton

Paper mill	27,550 gallons
Sulphite mill	98,800 "
Soda mill	59,500 "

The total water consumption for the mill approximates 10,000,000 gallons daily.

As it is common experience that large fiber losses invariably accompany high water consumption, the first step in remedying existing conditions is to reduce the water consumption. A supplementary survey would then reveal the most advantageous use of the present pulp saving equipment or the installation of additional units.

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WASHINGTON NOTES

National Waste Prevention Contest: The National Lumber Manufacturers Association is continuing for another year the $2,000 prize National Waste Prevention Contest. The $2,000 will be divided as follows: for the best entry submitted, $1,000; the second best, $500; for the next best three, $100 each; and for the next best four, $50 each. The National Contest will be supplemented the coming year by several Regional Contests, with suitable additional cash prizes for the best entries submitted. These two contests will run simultaneously, although some Regional Contests may be limited to devices or methods for specific purposes while in others the scope will be the same as in the National Contest.

Any entry eligible in a Regional Contest may be filed in the National Contest and it will be accorded the same consideration by the National Award Committee as though no Regional Contests were being held. An entry not eligible in a certain Regional Contest but eligible in the National competition may be filed in the latter. In addition the best ten entries filed in each Regional Contest will be included in the National Contest for consideration for the prize awards of $2,000, irrespective of whether or not they had been entered in the latter independently of the former.

Persons familiar with or employed in the manufacture of lumber and other sawmill products, either in woods operations, in transportation of forest products to the mill, or in saw and planing mill operations, and those in the employ of timberland owners, are eligible to entry in either contest.

New or original, practical devices, pieces of equipment, inventions, or specific methods of preventing waste, utilizing waste material, improving the quality of the product of the saw or planing mill, or reducing the cost of efficient lumber manufacture, designed for use in or applicable to any sawmill operation between stump and the finished product are eligible to entry in the National Contest and such of the Regional Contests as are conducted along the same lines.

No formal application or method of presentation is required, but there should be furnished a clear description of character, purpose, operation, and application of device, piece of equipment, invention, or method; and where circumstances warrant, illustrations, drawings, or photographs. The written opinion of competent loggers or lumber manufacturers as to the merits of or claims made for the entry, or the accredited results of any experimental trial or actual use of the device or method are always helpful to the committee in adjudging their relative merits. Entries for the National Contest should be filed not later than March 1, 1927, with the National Lumber Manufacturers Association, 402 Transportation Building, Washington, D. C. Announcements for the Regional Contests will be made by the Regional Association of Lumber Manufacturers.

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Do They Yowl? The universality of the old stuff about the young man's fancy and springtime is certainly apparent to any visitor at the National Zoo these days.

A pair of mountain lions in an amorous mood gave expression to their feelings in a manner which would settle once and for all any doubts as to whether or not they are silent animals. If you imagine the vocalizing of two lusty alley cats on the back fence of a moonlight night and then magnify the sound a thousandfold, you will have a fair idea of the singing of a cougar.

Do they yowl? We'll say they do!--P.J.F.

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FOREST PRODUCTS LABORATORY

Laboratory Helps Glue Users: Many samples of warped and twisted panels, loose veneers, and gaping joints have been received for diagnosis at the Laboratory during the past two months, indicating that springtime is anything but a time of rejoicing with many gluers of wood. The variable temperature and humidity conditions peculiar to the spring months seem to hatch real troubles from every latent weakness in the gluing operation.

According to Laboratory engineers defects such as those mentioned are usually due to some fault in the gluing operation itself rather than to any peculiarity of the glue. Loose veneers and open joints, they say, may generally be attributed to injudicious use of pressure, incorrect assembly periods, or wrong moisture content of the wood at the time of gluing. Warping and twisting may usually be traced to unbalanced construction, brought about by differences in the thicknesses of various plies, lack of consideration of the choice of woods for adjacent parts, or too little attention to the direction of grain in the plies.

The Laboratory in line with its efforts to prevent wood waste is interested in helping the glue user overcome his difficulties. The one-week course in gluing of wood is one method adopted by the Laboratory of extending aid. This course gives intensive instruction in the preparation and application of various commercial glues, and also in the preparation and care of the wood before and after gluing. Personal interviews in which each student presents for analysis by the men in charge of the instruction, the problem or problems which are causing trouble in his regular work, form an important part of the week's work. Frequently the men bring from the factory specimens of faulty construction. In such cases the instructor diagnoses the trouble and discusses with the members of the class the cause and the remedy. When necessary the Laboratory testing machines are used to test the strength of sample joints. In this way the student receives a service equal to the advice of a consulting expert and also learns to apply to specific cases the fundamentals acquired in the group instruction.

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DISTRICT 1 - NORTHERN DISTRICT

An Early Spring: District One appears to be a victim this year of the earliest spring on record in this region. By May 10, fifty reportable fires had occurred and 900 acres of National Forest land had been burned over. This is a record for the District. In no other year have so many fires occurred at such an early date. In many localities the grass is much farther advanced than usual, and in a number of instances stock have been turned on the range two weeks earlier than usual.

What all of this portends in the matter of the 1926 fire season still remains to be seen. It is well known, however, that there is at present a serious deficit in precipitation and in snow on the ground in the western part of the District.

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Training Camp: Our regular spring training camp for incoming Rangers, held at Woodland Park, has just been closed. This year we had fourteen men, seven of whom were four-year Forestry men, three two-year Forestry men, one with a college course in Agriculture, leaving only three non-school men out of fourteen, or approximately twenty per cent. Two years ago the balance was the other way. Out of ten men, only two were four-year Forestry men.

The attitude of the school men toward the job is also changing. They are now beginning to realize the many advantages of the Ranger job over the old Forest Assistant job and the fact that it offers vastly more opportunity for real constructive work. Of course, they all expect to advance beyond the Ranger grade. Why shouldn't they? But the quality of the men coming in is such that competition is going to be mighty keen. In two more years it will be generally recognized that the regular line of promotion should be from the Junior Forester to the Ranger grade. While there is still some doubt as to the relative rank of the two positions, even now there is no comparison as to the relative importance of the two. The Junior Forester position carries no real responsibility and little opportunity, while the Ranger job carries the responsibility of handling almost independently all the various lines of business necessary in the management of a valuable quarter million acre estate. How there can be any doubt as to the relative importance of the two positions is more than I can see.--P.K.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

More Fire Cooperators: Within the past month two more large areas of private land have been covered by agreements providing for fire detection and suppression service. On the Coconino the Blackwell Lumber lands of 2,600 acres and on the Santa Fe the State Investment Company holdings of 11,000 acres will, in the future, receive the same degree of protection as is given National Forest lands. The "insurance" rate in the Coconino case, where both suppression and detection will be given at a flat charge, is two cents per acre; on the Santa Fe, where the hazard is lower and where, under this agreement, only detection service is paid for in advance, the charge is one cent per acre.

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Sidehill Logging: On a current caterpillar operation on the Coconino National Forest, using the Best 60 with the Best hydraulic big wheels, a sidehill was logged successfully. The average slope is about 30 per cent. The logs, in lengths up to 48 feet, were bunched by caterpillars on this sidehill, and hauled directly away with the big wheels, without causing much damage to the reproduction or the remaining stand. On this sale one of the main wheel roads comes off a mesa. This road has a 37% grade, with about 32% for another 500 feet. The caterpillars come down this grade in high, experiencing no trouble in controlling the load. Control is effected by partially dragging the load.--A.C.McI.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Demonstration: On a recent trip to the Weiser Forest, District Engineer J. P. Martin witnessed a demonstration of road building equipment. He saw a half-yard Orton gas shovel working on the P. & I. N. Railroad near Weiser, and a Byers Bear Cat scoop working on the State highway north of Weiser. The Orton shovel had been working nearly a month and was considered by the company and the operator to be first class. The Bear Cat scoop was operating satisfactorily, but since it has only a half circle turn it would not be very adaptable to our minor road work. The Orton shovel might be adaptable on many of our roads in connection with end dump tracks, provided it is substantial enough to last for several years continuous work. The State has been making some very heavy three blade steel drags, the heaviest weighing about 1,600 pounds. The length of these drags is 24 feet and is proposed for the main highways. A similar drag about 12 feet long is to be used in the maintenance of the North Fork Payette No. 1, with a new two-ton Holt caterpillar. Information was received that on their gravel roads the blades of graders when in continuous use last only about a month.

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Identifying Trees and Shrubs for the Public: At public camp grounds visited by many people, it will in some cases doubtless be advisable to identify the trees for the information of the public. It is intended, at least in the case of Bryce Canyon, to use strips of aluminum for this purpose. This District has a machine for stamping letters and figures onto these strips. The strips are about one-half inch wide and the letters slightly smaller. It is the intention to give both the common and scientific names. These strips can be nailed to trees which they are used to identify, and in cases where shrubs and other plants are identified, stakes or posts can be set in the ground, onto which the aluminum tags can be nailed, or boards can be nailed onto the posts and the aluminum tags placed on these.

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DISTRICT 5 - CALIFORNIA DISTRICT

Native Sons Sponsor Forest Conservation: The Native Sons of the Golden West at their recent forty-ninth Grand Parlor in Santa Rosa adopted two resolutions calling upon all members of the Order to actively sponsor the protection and wise use of the timber and other valuable natural resources of the State, and to join each year in the national observance of American Forest Week.

Grand President H. E. Welch of Lodi, in accordance with the intent of the resolutions, has announced the appointment of a special committee on forestry and reforestation, consisting of Past Grand President H. C. Lichtenberger of Los Angeles, George D. Radcliffe, Chairman, State Board of Control, Harvey M. Toy, Chairman, State Highway Commission, Roy W. Cloud, Historiographer of the Grand Parlor, and Richard L. P. Bigelow, Supervisor of the Tahoe National Forest. This committee, Chairman Lichtenberger states, will meet at an early date to formulate a comprehensive forestry, fire prevention, and tree planting program for the Native Sons parlors throughout California.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Forest Highway Program Announced: Nearly half a million dollars from the Federal Forest Highway fund is available for major forest highways in Oregon during the coming field season.

Highways to be built under this appropriation are as follows: The Burns County line section of the Canyon City - Burns highway, Federal Highway funds, $65,000, cooperation by Harney County, $65,000. The Long Creek - Beech Creek section of the Pendleton - John Day highway, Federal $50,000, Grant County, $50,000. Mount Hood - Wapinitia, Federal $35,000 (including clearing), Wasco County $25,000, State $6,000. Flora-Enterprise highway, six-mile extension, Federal $35,000, Wallowa County $10,000. Klamath Falls - Lakeview, 9½ miles, Federal $75,000, State $75,000. Medford-Crater Lake, surfacing, 6½ miles, Federal $50,000. Chapin Creek - Spray section of the Heppner-Spray highway, Federal $50,000, Morrow County $75,000. Dalles-California project (refinancing of going project) Federal $35,000. Maintenance of forest highways, Federal $54,000.

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DISTRICT 7 - EASTERN DISTRICT

Forest School Students Employed: Forty-six forestry students from nine schools have been assigned to eleven Forests in the Eastern District, as follows:

2 Yale
3 Univ. of Minnesota
3 Conn. Agricul. College
4 Univ. of Maine
5 Univ. of Georgia
6 Syracuse University
7 Cornell University
7 Iowa State College
9 Penn State (State Coll.Pa)

We have on file at the present time nine applications for summer work from forestry students. Men applying for summer jobs are being referred to the Supervisors, but with no promise of employment.--H.O.S.

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Wanted - A District Forester: State Forester Merrill, at Frankfort, Kentucky, is in the market for a District Forester at a salary of perhaps $2,100 per annum. The job will involve organization and handling (under the State Forester's direction) the whole job of Forest Fire Control in a definite section of the State. Ability along Fire Prevention lines and in the function of establishing cooperation among private timberland owners, are important qualifications.

The District Forester, Washington, D. C., will be glad to hear from anyone interested in this opening.--J.E.S.

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Ladies of Eastern District Organize: The wives of the officers have formed a luncheon club, which meets monthly. At the April meeting the name "D-7 Foreselun Club" was unanimously adopted, selected from the half-dozen submitted. The word Foreselun was coined by Mrs. R. E. Pidgeon from the first few letters of Forest Service Luncheon. The object of the Club is twofold - a social gathering stimulated by food for thought. Mrs. J. C. Dort is the president of the club.--G.B.K.

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DISTRICT 8 - ALASKA DISTRICT

Mineral Production in Alaska: A check of mineral production from within the National Forest portions of Alaska as compared with that from the Territory as a whole was made recently by the Supervising Mining Engineer of the Geological Survey for Alaska. His statement is interesting in that it shows so large a per cent (34%) of mineral production from so small a portion (5.6%) of Alaska's area. Following are the figures which he gives showing production for the calendar year 1925:

Kind of Mineral	Produced in National Forests	Total Alaska Production	Per cent of total from N. F.
Gold (placer)	--	$3,444,000	-
Gold (lode mine)	$2,566,000	2,706,000	94
Silver	153,000	475,000	32
Copper	2,631,000	10,350,000	25
Others, including lead, palladium, marble, etc.	673,000	875,000	77
Total	$6,023,000	$17,850,000	34

And yet we occasionally hear that mining is not permitted within the National Forests of Alaska!--M.F.M.

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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. X, No. 24. Washington, D. C. June 21, 1926.

OF SLOGANS --

By A. G. Simson, Pacific Northwest Exp. Sta.

The average American is an ardent proselytizer himself but, sloganeers to the contrary notwithstanding, bitterly resents being "preached-at" regardless of the need or truth of the preaching. The so-called slogan is a particularly bald and objectionable form of preaching. During the past decade literally thousands of forest protective slogans, strong, puerile, alliterative and ungrammatical have been foisted on a dully resentful public with results of doubtful value. If for no other reason but their very multitude they have defeated their own purposes. Imagine a careless motorist about to leave a camp fire burning, suddenly recoiling from his car, a blush of shame mantling his cheek as he mutters, "A Forest Saved is a Forest Grown" and proceeds to "Get That Last Spark." Which will appeal to the forest trespasser or the sloppy camper as the strongest deterrent, the slogan he saw on some billboard months ago or the memory of some friend haled before a cold-eyed J. P. and assessed the customary five and costs?

A glaring example of the effect of slogans and other forms of "preaching-at" is the attitude of the logger. Not so many years ago "Forest Vandal" was about the sweetest catch-phrase epithet applied to a lumberman. The result was a bitter antagonism toward foresters and all their works. It is only lately that the more sane policy of enlisting the cooperation of the logger in solving problems of reforestation is beginning to take effect and a measure of harmony is being restored. So instead of preaching at the man who doesn't need it and to the man who will have none of it let us ask their cooperation.

--AND COOPERATION

Man is gregarious and society is built upon the strong foundation of cooperation, and the only difference between the reformer who doesn't get things done and the politician who does is that the former says, "You are all wrong" and the latter says, "Help me right this wrong."

In the matter of the sportsman, camper, and tourist in the woods, it isn't necessary to prove to him that it is economically wrong to leave a dirty camp or cause a forest fire. He knows it and always has known it, so why bore the whole world to tears with a never-ending stream of "weeks" and "slogans." Rather say to him, "Help us abate these woods fires and filthy camp nuisances that we may all be benefited. And in order that you may work to best advantage we will organize a committee of Forest Vigilantes. Every citizen is eligible to membership, and possession of a vigilante badge empowers the wearer to make arrests where acts of trespass are actually observed and in other cases to aid in every way the regularly constituted peace and Forest Officers."

The vigilante idea is not at all a new one. Game Commissions and City Police Commissions and other organizations have found the direct cooperation as well as the propaganda effect of vigilante bodies of immense aid in their work. There does not appear to be any valid reason why the same principle might not be applicable to the problem of forest protection.

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TRAIL MARKERS

By Paul G. Redington, Washington

Anyone who has had many years of direct connection with National Forest administration cannot help but be interested in the discussion regarding trail markers published in the June 7 issue of the SERVICE BULLETIN.

When the blaze with the notch above was devised over twenty years ago as a proper form of trail marker, we all heartily agreed to the use of it because it was distinctive from the other markers which we found on the trees along the trails in the Western country, and at the start of our improvement work and probably up until well toward 1915 this blaze was religiously used by the men who had the trail marking to do. But as our improvement funds grew, the routes of many trails had to be changed, leaving the abandoned routes still marked with the typical blaze, and that confusion in the public mind has resulted in many localities is beyond question. In addition to that, we have had a very considerable turn-over in the ranger force in the past ten years, and with the burden of work placed on these men, it has been very hard for some of them to remember that we had a standard blaze. Too many miles along our trails do not now show the standard blaze, and I have learned from experience that no amount of hammering through inspection will eliminate the forgetfulness of many of the men who have not been brought up with the blaze and notch method of marking.

Then the idea was conceived in the Trail Manual that different barked trees should receive different treatment when the standard blaze was applied, and we can find now as we travel through some of the Western Forests a large square blaze with a small notch above on one portion of the trail and not far away a long, thin blaze with its notch.

That defacement of a large number of trees has come from lack of uniform practice or understanding as to what the blaze ought to be is true, and I sincerely believe that the time has about arrived when we should adopt some sort of trail marker described by Ranger Read in the District 2 Bulletin and more recently commented upon by Ranger Ahl of the White River National Forest and by Ward Shepard in the issue of the SERVICE BULLETIN previously mentioned. With the adoption of something like this, we shall have uniformity in marking, lack of defacement of trees, an opportunity for easy removal of a series of markers from an abandoned route to the new location, and but little, if any, increase in cost.

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FOREST PROPAGANDA AND FORESTRY

By John B. Cuno, Washington

Zon's article on the above subject in the SERVICE BULLETIN for May 31 sounds like the ancient wail that the world is going to the "bow-wows." He seems to have overlooked a great deal of progress that has been made in recent years, such as the efforts of the redwood interests; the increasing effectiveness of the fire-fighting associations in the Northwest; the work of many of the box, pulp, and woodenware manufacturers in New England, and the selective cutting of the lumbermen in the South, particularly those at Bellamy, Atmore, Birmingham, Brewton, and Lockhart, Alabama; Malvern, Crossett, and Fordyce, Arkansas; and Bogalusa and Urania, Louisiana. These are only a few of the interests that engage in definite forestry activities.

To be sure we do have some oratorical forestry in the United States at present, but, on the other hand, an increasingly large amount of honest-to-goodness forestry work is being done. It is not called "forestry" by the lumberman, for he usually has as much distaste for the word as some professional foresters have for the word "lumbering," but it is forest practice and good forest practice at that!

Has not the work on the 150 million acres or more of Federal forest land shown any progress? Have the State and Extension Foresters been marking time? Have the turpentine operators not awakened? Of course, they are just brushing the sand out of their eyes, but watch them during the next 10 years! Does the farmer know no more about the value of his woodlot than he did 20 years ago? For the answer to this question try to negotiate with him for his timber.

I maintain that the army of "doers" is proportionately larger now than when forestry first started in this country. A whole lot of unsound material was written in those early days, and a whole lot of adviceless advice was given.

No, forestry is not going to the "bow-wows." It is gaining momentum with every breath, even though only the sails of Rotary, Kiwanis, and Women's Club schooners are filled. Call it propaganda if you wish, but you will be more nearly correct if you name it "education." Public opinion is based on education, and forestry will get nowhere without the support of public opinion.

Let us devote more time to pointing out where forestry has been successful rather than attempting to prove it has been a failure.

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REDUCTION OF MAN-CAUSED FIRES

By Thomas M. Talbott, D-6

Excellent results have been secured from closure of areas, registration of tourists, and camp-fire permits under the regulations, and in Washington under the State law.

Outstanding examples of what can be done in the way of fire prevention are furnished by the success secured in the Blowdown area on the Olympic and the S. P. Natron cut-off construction on the Cascade. These two examples have been written up fully and published in the SERVICE BULLETIN. The secret of success in both cases was the advance preparation and close inspection and supervision of the projects.

Effective work has been done generally by the Forests in eliminating slashing hazards on and adjacent to the National Forests. Working under the State Nuisance laws, lists of these slashings,- tabulated as to ownership, location, acreage, and degree of hazard,- have each winter been transmitted to the State Foresters, who by notice under the statutes have required their removal, and by cooperation, inspection, and supervision, have seen to it that such removal has been undertaken at the proper time and under the proper conditions. The list for each State usually includes around 15,000 to 20,000 acres, distributed in about 250 localities altogether.

While lumbering fires constitute only about 5 per cent of the man-caused in D-6, they make up about 22 per cent of those that reach Class C size, leading even the incendiary and camper in that respect. The loss, also, is out of all proportion to the number, because of the large values and the extra hazardous conditions concentrated at the operations.

Special effort was made in 1925 to cut down the number of fires at logging and mill operations by early spring inspection of operations on and adjacent to the National Forests, and in cooperative areas, to see that all fire prevention laws were being complied with, and to talk to the operators as to the value of observing these precautions as insurance against loss. Inspections were made in detail, usually in company with the field superintendent or other company representative, and included spark arresters and ash pans on donkeys and locomotives, condition of track and rights of way, conditions of donkey settings, fire tools, pumps, hose, hose couplings, mills and mill burners, watchman and patrol service, and wetting around donkeys.

In general, it was found that the operator was as anxious to get through the season without a fire as we were to have him do so, but was reluctant to spend good money for fire-prevention equipment until convinced that it was the best kind of insurance and that the State laws were going to be enforced.

The inspections developed some conditions that were as much a surprise to the operator as to the inspectors; as for instance, the inspection made of a large tank car of the Flora Logging Company, Oregon,- 10,000 gallons all ready to be squirted on any fire within a thousand feet of the track; but when we unwound the hose we found that someone had rammed into the first section two or three snugly fitting sticks each about a foot long. This tank car did good service on a fire later in the season.

Instances of bent valve stems on steam pumps, hose of different sizes, rotten hose, and lost nozzles, were not infrequent.

On the Index district, Snoqualmie, we found a second-hand donkey just moving into the timber. The donkey was stopped until a new spark screen and a new ash pan were installed. It wasn't safe even then, so we went to the owner of the land, who hired an extra watchman to stay with the donkey, because he had not protected himself against fire in his contract of sale to the logging outfit.

A regular spring house-cleaning was given the Easton district, on the Wenatchee; and for the first time in many seasons there were no large logging fires.

At every place, without exception, where inspections were made at least one fire-prevention measure required by law was not being observed, sometimes very few were being followed.

In State areas adjacent to the National Forests inspections were made in company with the State warden. The cooperative inspection by Federal and State officers was very effective in getting results.

During 1925, fires due to lumbering operations were reduced in Oregon 16 per cent below the previous 5-year average; in Washington they were reduced 25 per cent.

The State of Oregon had 12 Law Enforcement men on the work prior to and during the closed season. The State of Washington is planning to put three inspectors on the work for the coming year.

Fire prevention consists not in lengthy discussions, but in finding the hazards in the field and in removing them before the damage is done. Like a Ford, it is not the smoke and noise that make the wheels go round, but the force applied directly to the shaft.

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WASHINGTON NOTES

Law Enforcement with Teeth In It. "$1,000 reward is offered by the Massachusetts Forestry Association, 4 Joy Street, Boston, for information leading to the arrest and conviction of the man who illegally started the forest fire in the town of Falmouth, Mass., which burned over approximately 2,500 acres on the 14th day of May, 1926."

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Well, Watson, What Do You Make of This? The First Congregational Church, delightful scene of so many Forest Service parties and the home of the F. S. Santa Claus, and the place of worship of our President, has been ordered closed because of unsafe structural conditions, and the building will soon be torn down. 'Tis more than passing strange that the authorities ordered this church closed so soon after the Forest Service Mixed Chorus began to practice there. Boy, page Mr. Norcross, Dorothy Smith, et al!--M.H.

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Enlarged National Forest Program Assured. An important step in National Forest policy was recently inaugurated when the National Forest Commission authorized under a recent law the purchase of forest land for timber production rather than watershed protection. The broadening of the policy insures the carrying to completion of an adequate Federal Forestry Plan by permitting purchases in the Lake States and in the Pine Region of the Southern States. The establishment in the Lake States of two new purchase units having a gross area of 2,245,078 acres was authorized and the purchase of 51,000 acres in Michigan was approved at $1.00 an acre. This is the first land being acquired by the Government exclusively for commercial timber production.

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JIPPO BUNCHING WITH CATS

By Leonard F. Kellogg, Shasta

Now that the "cats" have taken the wheels away from the horses, the next move has been to take the bunching away also. For about a year on an operation on the Shasta, the bunching has been done with a stray "cat" equipped with a short piece of wire cable and a pair of tongs. This has come about because the long logs which this company handles are too heavy, long, and cumbersome for teams to move easily or far.

As first developed, the bunching "cat" merely pulled the long logs parallel, a knotter trimmed them, and the teams rolled them together into bunches.

Later this was superseded by a "caterpillar" gas shovel, whose dipper and boom were replaced by an A-frame and block to carry the cable. This rig can move a pile of logs in a day and do a pile of damage. As in most divisions of logging on this operation, the bunching has been put on a contract or "jippo" basis. The crew, consisting of an engineer and one or two hookers to handle the tongs, is held to a base of 52 M. per day, and above this they get 30 cents per M. "jippo." Although the gas buncher figures are weak, the following comparison is given:

	Horse bunches	Gas bunches
No. of bunches scaled	55	16
Av. No. logs per bunch	4-5	3-4
Av. scale per bunch	.996 M.	1.317 M.

The higher figures for the gas buncher are due to: (1) Choice by the "jippos" of the larger timber (to get the scale); (2) Frequent leaving of top logs unbunched by the contractors; (3) Tendency to pile up higher bunches rather than to move. The horses bunch everything clean as they go. The gas buncher wanders about in quest of large logs. Still it can account for some 125-130 M. per day while a team can bunch 14-16 M. in this type and size of timber, which runs about 6-7 logs per M.

From the forester's point of view, the horse work is by far the preferable, as a cumbersome gas buncher is a clumsy thing to move about and considerable damage results to reproduction and poles. The horse bunches are better built than those by the machine, and do not as easily pull to pieces en route to the landing.

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A PAGE OUT OF THE LIFE OF A FOREST

(Taken from Representative Aswell's speech "Conservation of Louisiana's Natural Resources" given during a three-hour discussion of forestry in the House of Representatives during American Forest Week.)

"The forest industries of Louisiana now employ around 50,000 persons, or more than half of all industrial employees in the State. These workers were paid over $40,000,000 wages and salaries in 1924, and the forest products sold were worth more than $110,000,000. According to the State Forester, more than $300,000,000 is now invested in lumbering and dependent industries. Our forest industries pay 17 per cent of our taxes, or more than all the farms. The cut of sawed lumber alone in the last 25 years exceeded 80,000,000,000 board feet, worth close to $1,500,000,000, or more than all the gold that California has produced. This is more lumber than any State of the Union cut during the same period, with the single exception of Washington. In Louisiana there are now upward of 13,000,000 acres of cut-over land and less than 4,000,000 acres of virgin timber, which is being cut off at the rate of 300,000 acres a year. At this rate the forest industries are facing an early end, unless the cut-over land is made to produce more timber. A large proportion of it is not doing so now, and mill after mill is cutting out and being dismantled, leaving behind thousands of acres of idle land and deserted villages. This means heavier taxes on the farmers remaining, as the whole burden of local government, schools, roads, and so forth, falls on them; heavier taxes on the cities and other parts of the State as total taxable wealth is diminished; fewer local markets for crops and fewer jobs to help out when crops are poor; higher costs of lumber for building; less freight for the railroads and the bankruptcy or abandonment of many lines.

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DOES IT PAY TO DESTROY PRAIRIE DOGS?

A certain ranch in Quay County, New Mexico, consisting of approximately 2,300 acres, was heavily infested with prairie dogs, reports a recent Biological Survey report. The infestation was so heavy that the owner experienced some difficulty in leasing it at 5¢ an acre. In fact, it was only leased when it was understood that the Biological Survey would poison the prairie dogs. This was in 1925 and during the summer 1,760 acres of this range were poisoned at a cost to the owner of approximately 6¢ an acre. The poisoning operations were effective and the owner found little difficulty in releasing his range this spring for 12¢ an acre. The increase in lease returns alone more than paid for the cost of destroying the prairie dogs, and the potential value to the range for future use cannot be estimated.--District 3.

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TELL YOUR STORY THREE TIMES

"Tell your story three times and you will be hitting the Editor dead right, especially the editors of trade papers. In the first place write your story and tell your story in that. Then put on a snappy head with subheads running through the story, breaking it up, so that, when read one after the other, they, too, will tell the story. Then, as a third and final telling of the story, send in enough pictures to tell the story, each with enough of a caption to carry the picture.

By doing that you will be hitting on high. The picture reader will get the yarn from the illustrations. The head reader will get the story from the heads, and those who have time really to read a trade paper will get the tale from the story itself. By all means tell the story three times." --Author & Journalist.

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NATURAL REGENERATION IN SOUTHEASTERN ALASKA

By J. M. Walley, Tongass

Observations on the Tongass indicate that in this region of humid climate natural regeneration is assured. All cut-over areas examined are adequately stocked. Our principal problem is to devise methods to insure ample reproduction of the most valuable spruce species. The most outstanding result of recent studies is the indication that practically all new reproduction is from seed distributed over the area the fall before cutting and after cutting. If there is any stored seed, which appears doubtful, we cannot depend on that source for natural regeneration. Slash burning appears not to insure adequate reproduction or favor spruce, the latter being quite uncertain, however. There is no cut-over area at present so extensive but what adequate seeding from the side takes place over the whole area, so it is apparently impossible under present conditions to appreciably control the per cent of species in the next stand. However, on extensive cutting areas, as is likely to be the rule in future pulp sales, the composition of the next stand undoubtedly could be almost completely controlled (and seemingly the only way) by the regulation of seed supply and possibly by burning. Economic conditions will determine, to a large extent, how far we can go in this matter.

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RANGER DISTRICTS

Our plans for the Fiscal Year 1927 contemplate a total of 143 ranger districts in District 4. This gives us an average ranger district of 206,000 acres net, or 214,000 acres gross.

We still have five ranger districts with areas below 100,000 acres; 27 districts below 130,000 acres; 10 districts from 131,000 to 140,000 acres; 14 districts from 141,000 to 160,000 acres; 16 districts from 161,000 to 180,000 acres; 14 districts from 181,000 to 200,000 acres; 15 districts from 201,000 to 225,000 acres; 28 districts from 226,000 to 300,000 acres; 12 districts from 301,000 to 500,000 acres; and 7 districts over 500,000 acres.

There are lots of considerations, of course, in determining the size of ranger districts. Some districts are small due to the fact that to make them larger would put into one district widely scattered divisions Some districts are small because of the intensity of small timber sale and grazing work, and possibly we still have a few ranger districts that are small without sufficient reason.

Further, we have some districts fairly large where the work is not intensive and where there is a chance to make them still larger.

In any event, particularly in case of the smaller ranger districts, we should study the matter sufficiently to make sure that there is not a good chance of further consolidation.

There certainly is a limit to the acreage that can be successfully handled as separate ranger districts. On the other hand, we may not have reached that limit in all cases, This is an important matter in endeavoring to get activity costs as low as practical, consistent with high standards of performance.

We have but two yearlong assistant district rangers. We have no rangers at large. Any other rangers or assistant rangers are on special work such as project timber sales.--District 4.

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Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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GEE!! - FISH AND GAME

By J. A. Thayer, Tongass

All you Ike Waltonians listen to a real, not a reel, fish story. This is not a tale of a big one that got away, but of two million little ones that did not.

On March 15 a school of herring, estimated by local fishermen to be at least fifty thousand barrels of herring - there are over a thousand to a barrel - entered Shelter Cove, the harbor at Craig Ranger Station. This cove is about two hundred yards long and fifty wide. When the tide fell there was not enough water for the whole school; so the fish on the bottom were smothered. The greater part of the school escaped through the narrow entrance but some two million were left dead in the cove, where they now repose in a heap some four feet deep over the bottom. Some of you end to end statisticians figure out how far two million fish eight inches long would reach if placed stem to stern (as I wish they were) instead of being piled all over the beach. With the approach of the warm spring days it becomes daily more apparent that "something must be did." The Ranger is uncertain whether to requisition a gas mask or to "flee as a bird to the mountain" until these foolish fish have done with their suicidal frolics.

The vicinity of Craig on the West Coast of Prince of Wales Island is one of the greatest herring spawning grounds in Alaska. Larger schools than this one have been smothered under similar circumstances in the past by being caught by the tide in shallow bays. Some herring fishermen claim that the sea lions drive the schools into the inside waters; others contend that the fish come in of their own accord at spawning time and the sea lions follow as a matter of course. The herring spawns on the broad shallow beaches in this region and not in fresh water as the salmon does. The spawn sticks to whatever it touches, and the natives collect it for food by throwing the branches of green trees into the water along the beach. When these limbs are removed from the water they look very much as the branches of a tree after a severe sleet storm, the transparent glutinous mass of eggs appearing very much like ice.

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PROGRESS OF NAVAL STORES INDUSTRY

By Austin Cary, Washington

For an industry that half a dozen years ago was voted hopeless by its leaders, considered to be stuck in deep ruts, incapable of awakening or reform, the naval stores industry for the last 2 or 3 years has been manifesting surprising vitality. Signs of life were in fact apparent before that to those in immediate contact with it; then some, like the Salvation Army, never will believe that men are finally "out."

Many with only ordinary means of information, however, must have known of the trip of the commission of turpentine men to France two years ago. That was a sure sign of life, and in fact a good deal that is worth while has proceeded from it. Many of the 2,000 operators today are alert and thinking. They are revising their operating methods; they are buying land; they are doing business in safer and sounder ways; they are organizing and in the way of research have already begun to feel the good effects. The "Pine Institute of America" embodies the ideas and aspirations of leaders in this last field and bids fair to play a tremendously important part in affairs as time passes.

No American industry, it would appear, is more indebted for timely and effective stimulation to agents of the Government. The beginning of that dates back 25 years. Charles H. Herty, then a young chemical teacher from North Carolina, was found interesting himself in the methods of producing naval stores in the woods, was taken up by the National Bureau of Forestry of the time, and prosecuted studies and experiments that demonstrated the superiority of the cup over the previously used box system. As the first big reform of practice in about 300 years it was adopted slowly, but is now practiced almost universally.

For some years after that Government activity nearly lapsed except for the regular National Forest Administration and the statistical service of the Bureau of Chemistry; it was, however, renewed 6 years ago. The writer was first in. Having looked over the southern field with a view to productive effort, this section of it seemed to offer utmost promise, and experiments on the yield of trees of different sizes, of one and two cups per tree, and studies on the effect of different styles of working were inaugurated. This was done through members of the industry itself or in immediate contact with them. Therefore, results were brought to bear directly, and they were also embodied in a series of more than 20 papers in the organ of the industry, the Naval Stores Review of Savannah.

Others soon followed, however - Miss Gerry of our Madison Laboratory with illuminating work on the microscopic side of gum production, the Florida National Forest with publication of results of tests of the French system, the Bureau of Chemistry with highly productive work in the interest of better stilling, while just lately the Southern Pine Experiment Station has come in. That the industry has responded in the right way and is continuing to do so has been indicated already.

Much might be written in elaboration of all this, but I will further refer only to the very latest development, making clear the background, however. Something over two years ago Miss Gerry and myself were approached by the biggest producing concern in the field who told us they were satisfied our ideas were sound and would be of great value to them; they had difficulty in getting them across to their field force, however, and they wanted us to meet their foremen in regional groups, talk to them as effectively as we could and thus help to get the thing in actual operation. That was a call not to be declined. At three big meetings, at Bradentown, Florida, Laurel, Mississippi, and De Ridder, Louisiana, we talked to the men responsible for something like 1,000 crops, a very considerable fraction of the entire industry.

It went; it was evident at the time that it would; moreover, the occurrence was extremely opportune. 1924 and 1925 were years of extreme drought in parts of the South, a fact that tested methods of turpenting to the limit. And through that test the conservative methods of working that we recommended, in respect both to yield of gum and to safety of the timber worked, came with flying colors. Much reason indeed those men had to thank the representatives of the Government.

All that came out clearly this last March when much of the same ground was retraversed and another and more extended series of talks was given. Starting the first of March at the third annual Get-Together-Meeting of the industry (a feature now merging into the Pine Institute before mentioned), Miss Gerry with the writer worked across the naval stores field to Waycross, Georgia, giving illustrated lectures at strategic points, examining the work in the woods, in close association with the leading men in the industry. Some 2,000 crops were represented in our audiences, and the vital interest was perfectly evident in many. The best proof of the effectiveness of this work is that more of the same kind is wanted. The leading factorage houses show particular interest; they are trying to build up their industry in every way and believe that what we have to give contributes materially toward it. France is considered today to be away ahead of America in this line of industry. The writer feels like saying this - give us in America 10 years more, and then let France look to her laurels.

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DOG SLEDDING TIMBER SURVEY OUTFITS

By Will Barker, Superior

Man-packing, motor trucks, gasoline speeders, canoes, and motor boats are a few of the methods of transportation used on the Superior Forest, and frequently they are all used on the same trip. But, with the exception of man-packing, these are all special means of travel and depend upon open roads, railroad tracks, and water routes.

Winter transportation is a different proposition. A man on snowshoes with a pack on his back is the usual method, but last winter the timber survey party tried dog teams. Supervisor Richey obtained the cooperation of the State Game and Fish Department, and they loaned us a seven-dog team, toboggan, and driver several times. They own a few dog teams, which the wardens use for winter patrol and to take supplies to the warden trappers stationed in the Game Refuge.

I was surprised at the load seven dogs can pull. When Ranger Mulligan's camp was moved across Northern Light Lake and up North Brule River, there was nearly 1,000 pounds on the toboggan according to Warden Boostrom, who drove the dogs. They handled this alone over the snowshoe trail on the ice, but the load was too high, top heavy, and part of it had to be "cached" when they left the river and started across country on a soft trail through the timber.

Ranger Carney's complete camp outfit and "chuck" for two weeks weighed about 800 pounds. The camp equipment consisted of two 10x12 canvas tents, two canvas flies, a small air-tight heater, a large size "Kimmel" cook stove, stove pipe, kitchen equipment for four, twenty-four single blankets (about 120 pounds), camp tools and cruising equipment. The same dog team pulled this 800-pound load eight miles in four hours. Back packing the stuff would have kept two men busy for at least a week.

Of course, seven dogs and one man cannot handle a load like that unless the trail is all hard packed and level, as on rivers and lakes. Boostrom needed all the help Carney and I could give him on the steep hills encountered on the "portages" and after we left the river. Even with the three of us pushing and pulling, it was occasionally necessary to remove some pack sacks tied on top of the load. Such odds and ends are more trouble on top of a loaded toboggan than they are on a horse pack. They cause the toboggan to slide off the tread on sidehills and are always catching on trees and brush along the trail.

"Following the dogs" is no snap, even for the driver, who hangs onto the tail rope and can step onto the back end of the toboggan when the dogs hit a good stretch of trail. The other helpers have to run to keep up and the perspiration flows freely, even at temperatures around 30° below, for the dogs travel five to six miles an hour on a hard, level trail.

The weight of the load that can be hauled does not increase proportionately with the number of dogs in the team. One of the camp men (cook, wood cutter, computer, general utility) had his two-dog team with him the latter part of the cruise and we used it to haul loads weighing up to 300 pounds.

Dog sledding requires some sort of trail for the dogs to follow. One man, and preferably two or three, depending upon the load, must go ahead on snowshoes and "break trail." Also, even a quarter inch of new (unpacked) snow will make a big difference in the load the dogs can pull and their speed.

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LINGUISTIC FEATS

By E. Murray Bruner, District 7

Precision in the use of terms is one of the outstanding requirements of scientific or technical work. Forestry is with us a relatively young science and consequently has not yet perfected its terminology. As we grow and develop we shall continue to find new terms, and doubtless for some time to come we shall find it desirable to discard or to modify many of the terms we now employ. But this in no wise excuses us for carelessness in the use of terms as they are now prescribed.

Even if we were dealing only with ourselves - the Service family - carelessness or lack of uniformity in the use of prescribed terms would lead to confusion. In fact, there is right now no little confusion within the family circle resulting from a laxity in the use of terms. If, then, we are so careless in our forestry expressions that we confuse each other, what must be the confusion we create in the mind of the public? If we all consistently made the same mistakes they might pass almost unnoticed for quite a while, but we lack such saving consistency. It is our lack of uniformity in the use of terms which is so confusing and misleading. Not only do individual members of the Service show disregard for the prescribed terms, but different branches of the Service use one set of terms while another branch uses a different set to convey the same meaning.

We should keep in mind that we are building an American forestry literature and we owe it to that literature as well as to our immediate public to exercise care in our use of forestry expressions. In our attempts to advance the "outward spread" of forestry, which is to characterize our efforts from now on far more than in the past, we must needs speak and write for the benefit of the general public. Therefore, in order to avoid confusion in the mind of the public, as well as for our own convenience and for the very sake of exactness, we must all speak the same language.

Particularly in the field of forest fire control have we developed a laxity in the use of terms, and this in spite of the fact that we have a special "Glossary of Terms Used in Forest Fire Control." In National Forest work, in accordance with the Service Glossary, forest fire control is divided into three very distinct parts or phases, viz., (1) fire prevention; (2) presuppression; and (3) suppression. All three of these phases of fire control are clearly defined and are taken into account in making the annual allotments. Forest officers write and speak about them from one end of the country to the other. These officers are striving hard to get the thousands of Forest users and cooperators and the general public to appreciate the meaning of these three distinct phases of forest fire control.

On the other hand, the Service prepares a detailed Statement prescribing the procedure to be followed for the administration of the Clarke-McNary law in cooperation with the States, and in which forest fire control is divided into two parts, viz., (1) fire prevention; and (2) suppression. No such activity as presuppression is recognized in State cooperation. Consequently the various State forestry officials get out voluminous publicity material and broadcast it to the country that all forest fire control is divided into two parts. They preach this doctrine from the very same platforms upon which our Forest Supervisors stand and proclaim that all forest fire control is divided into three parts. So where are we and what is the bewildered public to think?

Our confusion is no less than that of the colored boy, Sambo, who asked: "Rastus, is yo gwine do what Ah axes yo?" Rastus: "Ah aint saying as how Ah is or aint." Sambo: "Ah aint axen yo is yo aint, Ah axes yo aint yo is, is yo?"

Federal money is being spent to further both sides of this issue, while Forest Service instructions sanction both claims as correct. Can you beat it? And we poor Clarke-McNary law men have to stand up and speak both of these forest fire control languages at one and the same time, and are expected to defend our usage of each. SOME LINGUISTIC FEAT, EH? I vote that we have but one language dealing with this subject and that the prescribed Service Glossary which says all forest fire control is divided into three parts be our text book, the only rule and guide of conduct for every member and every branch of the Service. What say ye, brethren?

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SWEDEN'S PERPETUAL LUMBER COMPANY

Sweden has a lumber company that has been in business seven hundred years, and its forests today are in better shape than ever. The same land is cut over once in every seventy or eighty years. There is no waste land. It is continually productive.

FOREST HOMESTEADS

By C. H. Squire, Washington

Twenty years ago today, June 11, 1926, a law was enacted which is known by all the older Forest officers by its date rather than the subject matter. Probably no other activity is more responsible for gray hairs and no hairs on the heads of conscientious Supervisors than that caused by this law. Its enactment was due, largely, to the vivid imaginations of real estate promoters, western boomers, and subservient Congressmen who saw in the National Forests tremendous areas of lands which were susceptible of being converted into agricultural homes. The Act authorized the Secretary of Agriculture to list for homestead entry any lands within the National Forests which were found to be chiefly valuable for agriculture and not needed for public purposes. Under that authority 20,099 tracts were listed, aggregating 2,241,912 acres. The Forest officers, in their desire to carry out the intent of the law and to meet the local demands, in many instances recommended for listing lands which subsequent events have proved are in no sense valuable for the production of agricultural crops. Many of these tracts, however, were entered and the entrymen made a sufficient compliance with the requirements of the law to obtain patent. Later, many of the tracts were abandoned and are now put to no agricultural use other than grazing in connection with the adjoining National Forest lands. It is not meant to imply that the enactment of the law was a mistake - it met an urgent demand and resulted undoubtedly in the opening to homestead entry of some lands within the National Forests which unquestionably are chiefly valuable for farming. The fact that the Forest Service erred on the side of liberality is not to its discredit. It shows an earnest effort to place in a status for homestead entry all land which it was believed may serve as a basis for an agricultural home, and now puts us in position to show from actual results that some of the so-called agricultural land in fact has very little value for that purpose. It is now not difficult to prove that the remaining public lands within the boundaries of the National Forests are chiefly valuable for the purposes for which they have been set aside by the Federal Government - that is, the production of timber to meet the future needs of citizens of the United States and the regulation of streamflow.

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THE MAN-CAUSED FIRE CURVE

By E. W. Loveridge, D-3

I would like to contribute something "new and illuminating" to the discussion on the man-caused fire situation, especially as to how the number of fires in this class can be reduced, but I have been trying to do just that for several years and the word of command, even though it comes from a different source this time, causes not a flicker of sudden inspiration.

So far in the SERVICE BULLETIN articles on the "cause behind the cause," two points have been raised. One was that a reduction in the number - percentages mean little, of course - of fires of this class cannot be expected due to the growing increase in travel in the Forests. The other claimed that camp-fire permits, closures, and other uses of T-1 were the main factors in causing the reduction which has occurred.

No use to speak of has been made of the T-1 regulation in this District; still the record has improved from an average per year of 340 M.C. fires in the 1916-20 period to 279 during the past five years. There is no telling but that camp-fire permits and related practices might have helped to better this record, but the showing as it is and the corresponding one for the past two seasons are satisfactory if the improvement can be continued without changing our policy favoring unrestricted travel. This may, however, eventually be forced on us although the records show that it is the local people - those who would be least affected by T-1 - who are the source of ninety per cent of the fires. In other words, this regulation gets no credit as yet, at least so far as this District is concerned.

And contrary to what might offhand be expected, an increase in travel in the Forests has not increased the number of fires. Reports for D-3 show:

1924 - 481,881 travelers - 297 fires man caused
1925 - 637,932 " - 202 " " "

This same lack of relationship between numbers of visitors and fires is true also for years prior to 1924 so that, if this is an index, the first point mentioned does not seem to hold here.

Progress in prevention in the past five years has coincided with three Service policies which are new or have been given increased attention of late. In the further attention given them, plus one more step, the more substantial improvement in the fire record may be expected.

The policies referred to are: First, the general tightening up which has been going on since the Mather Field and Cooley conferences and has favorably affected all field practice. Second, the placing of PR on a more definitely organized footing with selective publicity based, at least theoretically, on properly kept records. Needless to say, much is yet to be done along this line.

The third policy which came to life, after the conferences mentioned above, is shown in the increased attention given to the enforcement of contracts, regulations and laws. The drop in recent years in the number of lumbering fires - a distinct credit to the S-men - has been an outstanding factor in bending the curve downward in this District and shows the results of enforcing the timber sale contracts. As for having the laws observed, education is good but, just to make it personal, the speed limit means something more than a good policy to the average citizen after he has contributed $15.00 at 9.00 a. m. to the police judge. At least this idea holds in the O-O country on the Datil which is about the worst man-caused section in this District. Here the herders and others of their class are not much impressed by publicity, but they dislike the J.P. and the jail at Reserve so heartily that they say, every time they hear of a fire, that they are immediately worried about that last smoke they had. These and any number of other illustrations all lead to the conclusion that for real prevention call on education, not overlooking the prime importance of personal contact with the local man who is still the chief culprit in this District, and law enforcement, with the palm for effectiveness given, for some time to come, to the enforcement part of it.

Plus one more step: "Training might and it might not make a poor man good but it will make a good man better" is another way of saying that some men are born fire managers while many others, although they may do their other work well, do not have the flair for this particular job. Men are often placed in certain positions because of their ability to handle sales, bad G-situations and so on. This is done with important fire work also but although fire carries the highest priority of all the various activities, a Ranger's ability along this line does not, as a matter of fact, seem to give him the distinction and salary which are needed to hold such men on fire districts in competition with those having work of another class. The answer apparently is to distinguish these few districts, on which usually the whole State or District record is dependent, as key fire districts; make the salaries really attractive; select for them talented men; and let them know and appreciate the heavy responsibility which is theirs.

UNIFORM UNIFORMS

There has been much discussing and "cussing" of the Forest Service uniform, all of which is probably more or less true.

But, after all, I am wondering if our uniform would not be more generally known and recognized if it were worn at all times when on duty or when attending official or semi-official meetings.

It is discouraging to go to a meeting or even a dinner given to Forest officers by some good cooperator to discover when you arrive in your uniform that about half or more of your fellow officers are wearing civilian clothes of all styles and colors, or worse yet, a uniform with a Derby or Panama hat.

There are times while off duty that a civilian suit would be appropriate, but not being able to afford both, I do not believe it out of place to attend either a wedding or a funeral in my uniform. In fact, I am proud of it and what it stands for, but I do feel out of place and conspicuous when I go down the street with several fellow officers, some in uniform, some in half uniforms, and others in civilian clothes,- a motley crowd to be sure. Nothing to my mind would look better than a gathering of Forest officers all neatly dressed in the standard uniform.

Let the uniform be worn so universally by all Forest officers that the public will recognize it through its use.--District 5.

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WASHINGTON NOTES

To Represent Department: Mr. William L. Hall, formerly of the Forest Service and now located at Hot Springs, Arkansas, has accepted the invitation of Secretary Jardine to represent the Department at the Sixth National Conference on State Parks, to be held at Hot Springs from June 14 to 17.

Many speakers of prominence will be on the program, including Governor Terral of Arkansas, Honorable John Barton Payne, ex-Governor Neff of Texas, Mr. O. C. Merrill, Executive Secretary of the Federal Power Commission, Honorable Stephen T. Mather, Director of the National Park Service, and Mr. John Oliver La Groce, Vice President of the National Geographic Society.

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New Logging Animals Discovered in California: Donkeys used to be the rage; now it's "cats." Either California timber is getting smaller or her cats bigger. How will the new Junior Forester be able to tell animal logging from steam logging?

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WOOD TECHNOLOGY

By Arthur Koehler, Forest Products Laboratory

Two hundred and ninety-four wood specimens from 48 sources were submitted to the Lab. for identification. One was identified to family, 2 to class, 49 to genus, 83 to group, and 159 to species. Five were foreign woods.

A piece of wood from a Roman Imperial Yacht that had sunk in Lake Nenii near Rome and had been brought to the surface by recent dredging, was identified as spruce.

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Service Bulletin
U.S. FOREST SERVICE
(Contents Confidential)

Vol. X, No. 26. Washington, D. C. July 5, 1926.

FIRE PREVENTION IN ARKANSAS

By W. B. Greeley

Foresters who have despaired of getting at the root of the man-caused fire and grubbing it out will be enheartened by the results of fire prevention, in the woods, in Arkansas.

The Ozark National Forest has a gross area of 511,000 acres. It has a resident population of 530 families, more than a family to every thousand acres. For three generations most of these people have been woods-burners. Burning the woods to get more grass, to kill ticks, to get rid of malaria, to improve the hunting, and for half a dozen other reasons, has been part of their religion. With such a large resident population, of such ingrained woods-burning habits and traditions, the protection of the Ozark has appeared well nigh impossible. In fact, the Service at one time threw up its hands and quit trying to protect it. The Ouachita National Forest has had the same problem on its hands in almost equal proportions.

A year or so ago a plan was adopted of having the District Rangers personally visit the head of every family in the areas of high fire hazard twice a year and tactfully but frankly talk about woods burning. The Supervisors undertook to visit a considerable portion of the families in the worst districts every year. These talks deal with the road building and timber cutting and reforestation plans of the Government. They bring in the idea of playing fair with Uncle Sam in what he is trying to do for the country. They undertake to show the harmful effects of woods burning to the lands of the farmers themselves and the futility of the common argument brought to its defense.

Two years ago the District bought a light truck, equipped it with a Delco generator and a motion picture projector, and set out on a campaign of fire prevention right in the woods. Two moving picture films were prepared in Arkansas - one of them showing the advantages to the State and people of permanent forests; the second dealing directly with woods burning in an extremely appealing and human fashion. One of the

Ozark Rangers, himself an Arkansan, has given much of his time to traveling with this truck from schoolhouse to schoolhouse, or church to church, or anywhere in the country where a few people can be brought together. He backs his truck up to the schoolhouse door or window; runs in his wires, sets up his projector, shows his reels with a few Arkansas lantern slides, and gives a very plain-spoken, straight-from-the-shoulder talk about woods burning. I suppose that these are the first moving pictures some of the Arkansas hills people have ever seen.

I attended one of Ranger Waite's picture talks. It was in a district schoolhouse and standing room was at a premium. About 100 men, women, and children listened attentively for two hours. It seemed to strike home. This vivid and visual attack upon woods burning is reaching every "middlesex, village and farm" in the Arkansas Mountains.

During the spring season of 1926 up to the time of my visit the Ozark National Forest had 86 fires, burning 1100 acres, whereas during the same period in 1925, 113 fires had burned 10,964 acres. The Ouachita National Forest had 129 fires with a loss of 2,433 acres last spring up to the time of my visit, whereas during the corresponding period of 1925 it had 319 fires with a loss of 17,529 acres. The spring fire season had about terminated when we were in Arkansas. Without jumping to hasty conclusions and with due allowance for the somewhat more favorable weather in 1926, it is still reasonably apparent that some change is afoot both in reducing the setting of fires and in getting better cooperation in suppressing those that do get out. I believe that this change can be traced directly to the different viewpoint which is being taken by the local people.

In the Solo district of the Ozark, Ranger Kunze worked out a local plan of fire prevention of his own. His most thickly settled district of some 5,000 acres contains about 40 families. It had always been a smoke center. In the spring of 1925, it gave Kunze 30 fires which burned over 1,700 acres. Kunze started a local association for fire prevention. Meetings were held and it was "talked up" in the neighborhood. The members of the association adopted a pledge to set no fires and to assist the Forest officers in putting out any that they saw. The Government was to pay no wages for fire fighting but agreed to furnish tools and food. It was all quite formal, with an appeal to folks who like to join things. All but two or three of the families were signed up this year, and during the last spring season there were only two fires which burned 1.16 acres. Kunze is quite particular about that sixteen-one-hundredths of an acre. It was precisely that - no more and no less.

Of course we are just getting under way in this Arkansas fire game. But I believe that District Seven has developed a method of fire prevention in dealing with local populations of this type that promises far greater efficacy than the doubling of guards or lookout towers. It is direct and localized. Every shot counts. There are undoubtedly many opportunities elsewhere in the Service for this sort of attack upon the man-caused fire in its lair.

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DELINQUENT GRAZING FEES
By Will C. Barnes, Washington

During the years 1921, 1922, 1923, and 1924 grazing permittees on the National Forests became delinquent in amounts aggregating $329,218.21. Owing to the general financial embarrassment of the livestock industry in the West, due in some instances to unfavorable markets and in other instances aggravated by serious drouth, the stock was allowed to enter the Forest for many periods in advance of payment of the grazing fees and issuance of permits. This amounted substantially to an advance of credit to the stockmen. The returns, as indicated by total collections made by the Service, seem to furnish substantial proof of two things - first, that the stockmen generally were deserving of the credit extended to them, and secondly, that the Forest Service is a fairly efficient collector.

During the four years mentioned the grazing fees amounted to a total of over $8,000,000. As already stated, the sum of $329,218.21 became delinquent, but up to the present date of this amount the Service has collected $247,238.64, resulting in a net loss of only $81,979.57. On a gross business of substantially $8,000,000 in grazing fees returned to the Treasury during that four year period, the net loss amounts to just about one per cent. Considering that the average business losses through bad debts as reported by commercial agencies far exceed this, it goes to show that as a collecting agency we are in the front rank. It has, of course, been a tiresome and thankless task to keep hammering away at delinquent permittees in order to get them to pay up, but considering that we are a public service organization and that we have endeavored to meet our delinquents in a sympathetic and kindly attitude we can point with pride to the record made.

The year 1925, of course, is not considered in the compilation for comparative purposes, because the fees were waived in District 3, and the improved conditions in the livestock business naturally reduced the number of delinquents. Undoubtedly when the next yearly report is made the percentage of delinquent fees uncollected will be extremely low, probably back to the pre-war average.

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SOME UNSCIENTIFIC ASPECTS OF LOG SCALING
By R. F. Taylor, Tongass

On the Tongass (see directory) we have rain, timber, and a beautiful sunset every few months. It is a wonderful country and we are all proud of it, but, of course, it has a few drawbacks. When a tourist says, "My, how it rains up here," and one answers, "The --, is it raining?" - then one is acclimated. It is almost necessary to become a sort of half-fish to scale the timber in Alaska. Firstly, the scaler is half submerged while on top of the logs, which are in rafts of from 200 M to 400 M. The mechanical motions of scaling are simple, requiring merely the manipulation of a measuring stick and calipers. But wait! We start on the tail stick and all is well. At the third log the boat 11357T of Killisnoo tears past bearing a Siwash troller who rings a bell, leaves the wheel and dashes to the engine to obey his own signal. Large waves roll in and the scaler flies from one log to another preferring density .5 to density 1. As the waters subside 2,000 sea gulls take the air. The scaler being used to sea gulls and their little ways pulls down his hat.

As he scales the first swifter, the logger of the raft comes out with his partner. He takes a chew of Copenhagen and insinuates, "Val, dis ban fine raft Oola, you tank she ban go 200 tousand, ya?" Ole says he thinks at least that considering the fine quality of the timber. Then they both turn to the scaler and ask his opinion. He opines about 150 M but says 170 considering those present. They follow him a while making comments, then selecting a cull say, "Vat you do to das faller here, - lettle bit rotton I tank but purty good log, ya?" All this takes the logger's time but he considers it good business as the scaler sees red instead of defect.

At noon he starts across the logs toward the mill and lo! the raft has moved out with the tide 12 feet. In vain to pull on the rope or cable. In desperation and muttering imprecations he makes a heroic effort which nets him 10 feet and he becomes wholly submerged. If he wears a suit of the popular aviators water-and-wind-proof he may either walk ashore under water or climb the nearest pile. Otherwise, he can claw his way to the surface and continue. Scaling is a simple pastime, but for newcomers to Alaska a few weeks standing in a puddle of water in a large aviary is suggested as preparation.

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TIMBER BEASTS

In olden days in water white the agile river hog
Each spring would drive the roaring streams aboard a bobbing log.
In India the elephant with calm, majestic ease
Picks teakwood logs up in his trunk as nifty as you please.
Our friend the horse, his cousin too,
The wise but onery mule,
Have toiled in all the logging camps
Since Doyle first scaled his rule.
Paul Bunyan swore by his blue ox,
Some liked the sad faced bull,
The donkey came and kicked them out
Because he had more pull.
Now comes the loudly spitting "cat"
A-slipping through the woods.
He is the latest timber beast
And seems to be the goods.
In lowland farms where fields are wide
They hitch him to a plow.
But when it comes to logging logs
He is the cat's Meow.

"Robin Adair" (D-5)

FOREST PROPAGANDA AND FORESTRY

By L. W. Shevling, Custer

Not to disappoint "Ye Editor," I feel like taking a friendly poke at Mr. Zon. Mr. Zon says, "If words would make trees grow, etc." The same could be said of religion, if words would make converts we would all be Christians, but we know that such is not the case. But is that any reason why we should abandon the subject? We also know that if it were not for that everlasting hope of mankind this world would not progress very far or be a good place in which to live.

The subject of religion has been, and is being, discussed not only by preachers but by people of all ages, races, and countries on the face of the globe since time began, and still they do not despair but maintain, and I believe they are right, that some progress is being made. Then, why should an infant like the Forest Service give up the Ghost after so short a period of existence?

We are all familiar with the old adage: "The constant dropping of water on a stone will eventually wear a hole through it." To be sure we should practice what we preach, but also I believe we want to keep up the output of words until eventually some of it will penetrate the consciousness of that percentage of the people that are, unbeknown to themselves, Forestry-minded.

It is not to be expected that everyone feels like planting trees, but we can get those that do not to help protect the forests that are already growing. By working with children between the ages of five and twelve years, our words will begin to bear fruit.

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TRANSFER OF PROPERTY

From: S. M. Shanklin, Dist. 7　　To: H. H. French, Dist. 2

Quantity	Articles	Condition	Remarks
1	Perfectly good forest (This also includes herds of buffalo, elk, deer, and antelope. Flocks of turkey. 100,000 visitors and the good will of every one)	splendid	

Shipped via ------　　No. of Packages 1

Invoiced - June 27, 1926　　Received __________

Name - S. M. Shanklin　　Name __________

Title - Forest Supervisor　　Title __________

FIRE CONDITIONS IN DISTRICT 1

Fire conditions in the western part of the District have become serious since June 1, particularly on the Kootenai, Lolo, Pend Oreille, and Kaniksu Forests. Shortage of rainfall with low humidity and high winds each afternoon have combined to create a hazard unusual for early June. One fire has reached one thousand acres in extent, and four have exceeded one hundred acres.

Most of the larger fires reported were hang-overs from brush burning on private lands. Considerable damage has occurred on the Pend Oreille, where the Grouse Creek fire burned a camp and a large quantity of logs belonging to the Humbird Lumber Company. This fire was mostly on private land.

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WESTERN ELECTRIC TO STUDY ITS LUMBER REQUIREMENTS

L. N. Ericksen of the staff of the Forest Products Laboratory has been granted a year's furlough to undertake a survey of the lumber requirements of the Western Electric Company of Chicago. The principal aim of the survey will be to determine the suitability of different grades of lumber for various uses in the manufacture of electrical goods. A study of the practicability of the purchase of small ready-cut stock to meet the needs of the giant electrical equipment plant of the Chicago firm may also be made a part of the study. Mr. Ericksen expects to begin the investigation early in July.

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THE LATEST TOURIST FAD

The collection of western souvenirs by tourists is starting with a rush this season, states the Sitgreaves Elkhorn. The latest eccentricity is to collect a wild burro colt and take it home as a remembrance of the open spaces and the songs of the West. Recently there was seen in Winslow a party of tourists en route to New York State. They were traveling in a Reo speed wagon that was fully equipped for quick and convenient camping, folding bed attached on each side so that when let down bed and tent could be used. On one running board facing the east and its new home was a burro colt. The colt was actually traveling De Luxe. It was in a small crate and was anchored therein by a set of slings which also served as shock absorbers. The driver stated that they stopped twice a day to let the colt graze, put him on a stake rope at night, and fed him oats at odd times. They also stated that the mother of the colt had been killed at the bottom of the Grand Canyon and that they had had the colt thirty days at this time. Everyone in the party seemed happy, even the colt.

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CHURCH CAMPS

The vicinity of Pactola on Rapid Creek in the Black Hills Forest is the scene of an interesting recreational development. Four different religious denominations have started camps which promise to develop into big undertakings. Each camp has a community center on which there are assembly and dining halls, space for games, parking and camping. The camps vary in purpose from one primarily of rest to a more ambitious one which will conduct classes of instruction for religious workers. Another will be more on the order of the old fashioned camp meeting, with the additional prospect of holding the annual district church conference at the camp.

Plans have been prepared for each unit and development must proceed accordingly. These plans show the areas reserved for community development, individual summer home sites, and reservations for banking grounds and skidding for future logging. These reservations are made so that there may be no objection in the future to logging, and so that the removal of the timber may not be blocked by improvements.

The permit is issued to the church organization and a fee is charged for the community development, with an additional charge for each cabin built by one of their church constituents. There is room for from ten to thirty cabins in each camp site, as well as camping space for many more. By holding the central organization responsible, the Forest Service supervision is very much simplified. The grouping together of people of similar interests is much more satisfactory to the permittee, and since there are numerous sites room is available for all who wish to have summer homes in the mountains.

The Congregationalists have a camp at Placerville, the Methodists are located in Boarding House Gulch, the Baptists are in Bear Gulch, and the Presbyterians are in Magpie Gulch. The natural rivalry between the various organizations is causing some stimulation in the building program and in the character and size of the community buildings.

The Episcopalians have a similar camp on Iron Creek on the Harney Forest.

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THE NEW PINE TREE BOOKMARK MEETS WITH APPROVAL

As showing how much the new pine tree bookmarks appeal to the youngsters the Coconino News submits the following:

Boy No. 1: "I'll give you three of these bookmarks for your new speckled pencil."
Boy No. 2: "Make it five and I'll trade."
Boy No. 1: "It's a go." - District 3.

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WASHINGTON NOTES

Posters: If it were possible to accurately foretell the result produced by the workings of the human brain all guesswork would be eliminated, and it would be known in advance that plans formulated for dealing with the public would inevitably bring the desired result. In the absence of guiding rules it is necessary to await the results of experience, which in the case of Forest Service posters has shown that among the multiplicity printed in past years, three exert a popular appeal over all others. They are - EVERYBODY LOSES WHEN TIMBER BURNS, PREVENT FOREST FIRES - IT PAYS, FIRE, THE OUTLAW.

So many requests from individuals and organizations for varying quantities of these posters have reached the Washington office that the advisability of placing them on sale has been discussed with the Superintendent of Documents, and he has consented to have a supply printed for future demands. This will permit the Forest Service to refer to him, if desired, all requests for either single copies or bulk lots at the following prices, the proper remittance in each case accompanying the order:

EVERYBODY LOSES WHEN TIMBER BURNS:

Single copy	$ .05
1,000 copies	23.00
Additional thousands ordered at same time @	13.00

PREVENT FOREST FIRES - IT PAYS:

Single copy	$ .05
1,000 copies	26.00
Additional thousands ordered at same time @	16.50

FIRE - THE OUTLAW:

Single copy	$ .05
1,000 copies	22.00
Additional thousands ordered at same time @	13.00

Persons not connected with the Government should make their requests for posters direct to the - Superintendent of Documents, Government Printing Office, Washington, D. C.

If a District has any requests for these posters in excess of the quantity it can reasonably furnish, it is believed that by referring the applicant to the Superintendent of Documents a growing demand can be created which will result in one more step along the line of intelligent fire control. - E.B.

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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. X, No. 27. Washington, D. C. July 12, 1926.

OVERWORK COMPLEX

The Editor, Forest Service Weekly, Washington, D. C. Dear Ed:

I was over at Supervisor Bill's office the other day. Bill was busy; just awfully busy!! He explained to me right at the start that it wasn't a very good time for me to come. The Junior Forester had taken three days off to get married and had just got back. The Senior Clerk had had a bad earache that kept her out of the office a day and a half and cut down her efficiency from 98% to only 74% for three days more. This had thrown everything off schedule and on top of it old man Johnson's cows were in trespass again over on the Hard Scrabble range.

I am of an emotional nature and I right away felt pretty badly about Bill's plight. Then the telephone rang and Bill had to explain that because of my visit he couldn't go out to Luke Creek that afternoon with Junior Forester, Ranger Simms, and Jack Stearns to look at some bug-killed timber that Jack thought of buying. I hoped that the expedition could go forward in a crippled condition without Bill, but it seems that this was a matter needing his personal attention and it had to be postponed indefinitely. Bill and I had no more than started on a discussion of the pending suit against the Pot Hook Livestock Company when Deputy Ames came in with Farmer French, who wanted to inquire whether his old bull Pete met the livestock association specifications. That discussion took quite a while and before it was finished Bill had to excuse himself long enough to call up the hardware store and order a double-bitted ax and some chicken wire to be sent out on the stage for Ranger Smith.

Well, I "sat idly by." There didn't seem to be any way that I could help; so I went out into the room marked "entrance" to see if Miss Mabel Prentice, Senior Clerk, could write a letter for me. Mabel said her work was all caught up and she was glad to do this and thanked me for inquiring about her earache which it seemed was really a toothache. In the next room I found Junior Forester and Eva Sholtz, Second Clerk. Junior didn't know what he would do that day since the Hard Scrabble trip was off and Eva was waiting for Bill to dictate some urgent letters. Bill came out while I was there and seeing Eva with her notebook and six sharp pencils in her hand, called her into the room marked "private" and "plunged into the morning mail." He dictated to Rangers Jones and French each a letter telling them how to correct their expense accounts, one to Smith to be sent in lieu of Junior's letter regarding mistletoe on lodgepole and nine to certain grazing permittees about making their second payments. Evidently there were a lot more "cases awaiting action," but Eva's pencils all needed sharpening by this time and she had to get another notebook. Bill told her there would be some dictation after lunch anyway so she'd better type till noon and come in at one o'clock, thus saying the time that would be consumed on job to job travel through an extra trip to her room and back.

Maybe you don't know how I felt. It was just like the time when you loaded the wife and kids up and went over to make a week-end visit to the Walters whom you hadn't seen for a long time, and found the whole family in the midst of preparations for Lucy's wedding which was to take place "day after tomorrow." The groom and his mother and two little sisters were coming that afternoon and his father would be in on a late train that night.

I asked Bill to go to lunch with me but he couldn't because he had an important meeting with a committee of prominent citizens to discuss ways and means to kill the mosquitos in the bog west of town. Don't you think that's too bad? There are so many ways to get tired out that are better than doing it with the thought of being terribly overworked.

Well, you see how it was. I didn't know what to say - and then there came into my mind a story about two young colored folks. You know how things come that way, all out of regular order in your thoughts. And it occurred to me that Bill was maybe in somewhat the same predicament as Rastus. He was suffering from an overwork complex; he wanted to be that way. He might have passed all those jobs along had it not been for his state of mind. Mandy had dressed up in her new gown and gone for a stroll along the woods path. She met Rastus carrying a rooster under one arm and a washtub under the other and leading a mule. She charged Rastus with having come out there for the purpose of meeting her and making love. Rastus said "Gal, how you s'pose I could make love to you with this here rooster in one hand, this here tub in the other and leading this here mule?" And Mandy answered "Huh! I s'pect you couldn't put that there rooster down and put that tub over him and tie that there mule to a tree."

Hoping you wont have to work too hard during the hot weather, I am

As ever yours,
IKE CANTHOOK.

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REDUCTION OF MAN-CAUSED FIRES, D-7

By James E. Scott

In five years ending December 31, 1925, the National Forests of District 7 have suffered 5,315 man-caused fires, or an average of 1,063 each year. Lightning fires in this District are almost negligible.

Our objective in Fire Control calls for currently reduced total costs and damage as the natural consequence of,

1. Prevention of Man-Caused Fires
2. Adequate Pre-suppression Preparedness
3. More Effective Suppression Practices.

In a normal year we have over 1,000 fires and we spend,

$6,000	for Fire Prevention
$64,000	for Pre-suppression Preparedness
$30,000	for Fire Suppression.

With respect to none of the three items have we included the great costs in time and effort devoted to Fire Control by our yearlong or regular personnel. Not until last July was our Activity Costkeeping system so designed as to permit anything approaching presentation of such costs and we thus have less than a year's figures with which to deal. However, from our general knowledge of field activity, it may be said with certainty that to include such costs would hardly disturb the apportionment between the first item and the other two.

Thoughtful consideration of our Fire Control problem leads directly to the conclusion that further material progress toward our objective in fire costs and damage hinges very largely on the possibility of sharply reducing the annual number of man-caused fires; in other words, on Fire Prevention.

If we accept as inevitable 1,000 or more man-caused fires per year, there is little to criticize in the $100,000 annual expenditure above tabulated or in the apportionment of the time and energy of our regular personnel as applied to Fire Control, unless we hold that our expenditure of $6,000 in a necessarily weak Fire Prevention effort is unjustified. With all due allowance and promise for better management it is necessary to provide for lookouts, lookout-firemen and firemen, fire tools, equipment and rations, communication and transportation and all other items of our Pre-suppression preparedness on approximately the present scale so long as the fire risk maintains approximately its present proportions. A preparedness cost of $64 per fire denotes no material waste or extravagance. The average suppression cost per fire and the resulting acreage burned are doubtless susceptible of some further reduction through greater efficiency, but here again the attained figure of $30 per fire is not exorbitant when we think of each of our 1,000 fires as a potential disastrous conflagration.

In this fatalistic view of our Fire Control job we can only expect fires each year in increasing number as additional areas are purchased and brought into the protective system, for each acre brings with it its own man-caused fire risk. We must regard our $94,000 of Pre-suppression and Suppression expenditure, to say nothing of the tremendous diversion of our energies from more constructive works as fixed or growing charges, going on year after year , every possible saving offset, if not more than offset, by our increased areas and currently added risks.

Such an attitude is wholly intolerable. It means acceptance of our Fire Control job as unsolvable; acceptance of defeat before giving wholesouled battle; an admission, no matter how well we prepare for and how efficiently we suppress such fires as occur, of failure to get at the root of the forest's most noxious weed.

Our 1,063 annual man-caused fires are in the main attributable to the long established tradition among the mountain dwellers of the South that the woods should be burned for many reasons, coupled with the fact that these same people have not yet sensed the national or the local transition from a condition of timber plenty to one of timber scarcity with the consequent growing value of remaining forest growth. The people who thus deliberately burn our woods are not strangers in the woods. They are our Forest dwellers. We know or should know who and how many they are, where and how they live, why they burn or passively accept woods burning by their friends and neighbors. There is little of the element of malice. Knowing these things to deny the possibility of breaking down this tradition, of demonstrating the folly of their reasons for burning, of finding the avenue of approach which will in most cases lead to conversion is equivalent to admitting that the woods-burner is right and we wrong.

Our other major source of fires is carelessness, and here again it is carelessness confined quite sharply to our forest-resident populations - the direct forest beneficiaries. Such carelessness cannot be eliminated. On the other hand, it is entirely possible to anticipate the actions of the farmer in our Forest who may be careless when he burns his brush pile, his tobacco patch, his fence rows or undertakes the cleaning of his "new ground." To anticipate the carelessness of our sawmills, little and big, and of our railroads and logging roads is almost equally within the realm of possibility.

With no abatement of our effort to bring about better Pre-suppression preparedness and more effective Suppression practice, we elect to face the issue on this basis:

1. A recognition that in Fire Prevention lies the only prospect for material progress toward our objective of greatly reduced total cost of Fire Control and total fire damage.

2. That the woods-burner can be eliminated, except where malice is the actuating motive (the malicious we can put in jail). That carelessness among our Forest dwellers can be materially reduced or anticipated. In brief, that Fire Prevention is possible and practicable.

On this basis, and since we cannot materially cut our Pre-suppression and Suppression charges immediately, we simply must spend more on Fire Control for five or perhaps ten years that we may spend less in the long run.

In the first place Fire Prevention must have more of the time and energies of our regular personnel. This we can provide, in fact it is being provided in our current plans of work.

Secondly, some way must be found to more adequately equip our regular personnel that they may use their Fire Prevention time with maximum effect and to provide also for such special Fire Prevention projects, equipment and activities as have either already demonstrated their results or clearly promise results justifying their cost to incorporate in the campaign.

Our method in which there is nothing really new or spectacular first demands an analytical survey of the fire risk, ranger district by ranger district; scientific determination of where, when, and why fires are likely to occur. On that foundation we build our plans to provide for (1) Direct Action; (2) Indirect Action; (3) Reduction of Danger. These will be discussed in the next issue.

LOYALTY

By C. C. Hall, Santiam

Loyalty in an organization means a great deal, not only loyalty from the subordinate to his superior but the other way around. There have been more complaints of failure of loyalty of the subordinate because the fellow complaining has had more language and a better pen at his command, but we believe that more of the failures can be accounted for by a lack of loyalty in the superior rather than in the subordinate. Why, we have even known some who never realized that there was any need for them to be loyal to their subordinates. While there are always exceptions to the rule, if you are loyal to your subordinates you will never have to complain of lack of loyalty in your men.

CHARACTERISTIC LETTER FROM "GREAT AMERICAN"

By M. W. Thompson, D-2

Some interesting and historical correspondence has just been found in reviewing folders for early sales.

It seems that right after the Montezuma National Forest was created, an application was received for timber by an operator near Telluride. The Supervisor gave the applicant to understand that all trees exceeding a given size would be marked for cutting. Before the sale was worked up, however, a change in Supervisors occurred. The new Supervisor, with two Management men from Washington, went over the area on the ground and reached a definite understanding regarding the trees which would be marked for cutting. It was agreed that the Supervisor's assistant - one of the men from Washington - would prepare the sale shortly. This was done and the sale was made and completed apparently to the satisfaction of the purchaser and the Forest Service. In this connection it appears that the marking policy was much the same as that now followed in the western yellow pine type.

Without awaiting the arrival of the Supervisor's assistant, the Secretary and Treasurer of the Company applying for the timber directed a very critical letter to Senator Knox regarding the Forest Service's method of handling the timber business. Senator Knox's letter to President Roosevelt was as follows:

"Dear Mr. President:

I do not know whether the information contained in the enclosed letter is important, but I do know that it is reliable.

Mr. Clark was practically a ward of mine from the time he was fourteen until he arrived at age. He graduated from Harvard in 1903; was president-editor of "Crimson" and deservedly stood very high with all who knew him.

I can absolutely guarantee his thorough reliability and intelligence.

Very sincerely,

The President. P. C. Knox."

It is apparent that President Roosevelt personally prepared the following characteristic reply:

"Dear Senator:

I have at once sent to Gifford Pinchot Clark's letter and asked him to look into the matter and present a report to me. I know that on the one hand there is always danger that our agents may be a little over-strict; but on the other hand my experience is that mine owners (even when they are graduates of Harvard) care primarily to get their mines worked in the immediate present and are quite willing to sacrifice the good of the rest of the people for the future if their immediate object can be attained. I do not blame them very much, for a man's own interests often render him honestly blind to other considerations, but I have to take the fact into account. I am extremely obliged to you for sending me the letter.

Sincerely yours,

Hon. P.C.Knox, U.S.S.
Valley Forge, Pa.

THEODORE ROOSEVELT."

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THE GAULS ENTER ROME

(See Fred Winn's article "Another Wilderness Area Gone," SERVICE BULLETIN of March 22.)

The celebration opening the Coronado Trail held at Hannagan Meadow June 19-20 was an unqualified success. The promoters of the celebration had expected 1,000 to 1,500,possibly 2,500. On the evening of the 19th, 1,800 automobiles were actually counted and it is estimated that there were at least 2,000 cars at the celebration and 5,000 people. In spite of the fact that this vast assemblage of people was required to provide its own camp outfit, there being no sleeping provisions available, everyone seemed to be happy and no hardships were reported. The barbecue was also an unqualified success. The crowd consumed, with great relish, 7 beefs and 200 lbs. of beans. The barbecue was supervised by John Butler of Greer, Arizona, ably assisted by former Forest Officer Voigt. The program was short, occupying about two hours time and was restricted to those who had directly contributed to the building of the road, namely: Greenlee and Apache counties, the State, the Bureau of Public Roads and the Forest Service. As a part of the entertainment Indian Agent Chas. R. Davis brought a large contingent of Apache Indians in from the Reservation who staged a dance during the evening. On June 20 a community church service was held for those who desired to attend and in the afternoon a rodeo event was staged under the management of Ed Cole. The monument commemorating the completing of the road was unveiled by Governor Hunt as a part of the road opening ceremony. The monument is a granite composite with a copper plate and is an exceedingly attractive memorial. The event was so successful that its promoters are considering having an All-Arizona picnic at this point each year.

Following are some high lights on the celebration:

Among the 1800 cars present 46 States were represented. Pretty near a national affair.

With 6500 people roaming the woods and with 600 or700 camp fires burning at once, none of the fires escaped or caused any trouble. There is safety in numbers.

60 camp fires were counted from one spot Saturday evening.

The only fire which did occur was started by a smoker dropping a lighted cigarette. It was promptly extinguished by a passer-by.

Although the Forest Service maintained a fully manned fire organization it was not once called into action.

In spite of the heavy traffic two deer were seen along the road by the DO party on the way in.

The weather did its best, bright sun and no rain. At that the water pipe from the spring was found to be frozen each morning.

No road accidents were reported although the road is not entirely completed.

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ECTOBIA GERMANICA INFESTS TONGASS

By R. F. Taylor

Although bright young Technical Assistants have been constantly on the lookout for insect pests on the Tongass National Forest it remains for the Executive Assistant to make the astounding discovery. It was noted that as soon as the day force left the office a night crew came on in great numbers. A healthy specimen was selected and presented to a Technical Assistant who pronounced it to be an orthopterous insect of the genus Blatta. But, it was argued, the genus Blatta is large and will crack underfoot, whereas these specimens refused even to pop.

Reassembling the data it was finally agreed that Ectobia Germanica inhabited the offices of the Tongass. A letter was written at once to the Superintendent of the Building demanding eradication, or at least control measures. "Cockroaches," dictated the Executive Assistant, "are overrunning the offices. Please get rid of them!" A sigh was heard from the Supervisor's office,- "Ah, that we could thus eradicate hand loggers!"

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BEETLE LOSSES IN THE YELLOW PINE OF OREGON AND WASHINGTON

By A. J. Jaenicke, D-6

Enough beetle survey work has been done in Oregon and Washington the past five years to justify rough estimates of the average annual insect loss in yellow pine. At least 90 per cent of these losses are due to the work of the western pine beetle (D. brevicomis) and the mountain pine beetle (D. monticolae) with brevicomis far in the lead.

The estimates are based on Bureau of Entomology and Forest Service surveys during the past five years (1921-1925 inclusive). At least two-thirds of the yellow pine (Pinus ponderosa) in all classes of ownership was actually covered by one or more surveys during this five-year period. The annual loss figures given in the next sections represent the average annual loss during this five-year period, but these annual loss figures are believed to give a rough picture of what has probably happened in an average year of the past decade or more.

Oregon Losses: The total yellow pine stand, all classes of ownership, is estimated at 76 billion board feet. The yellow pine area covers about 10,000,000 acres. The stand can be divided as follows according to the severity of beetle damage:

25 billion board feet - involved in epidemic infestation most of which is by brevicomis, in which the average annual loss is estimated at 250 million board feet, or one per cent of the stand.

51 billion board feet - involved in endemic or normal infestation, in which the average annual loss is estimated at 153 million board feet or three-tenths of one per cent of the stand.

The total annual beetle killing in yellow pine for the State is estimated at 403 million board feet, a loss of nearly $1,500,000 in timber values.

Washington Losses: The total yellow pine stand, all classes of ownership, is estimated at 14 billion board feet. The yellow pine area is probably about 2,000,000 acres. The stand can be divided as follows according to the severity of the beetle damage:

3 billion board feet - involved in epidemic infestation, a considerable part of which is a mixed monticolae-brevicomis infestation, in which the average annual loss is estimated at 45 million board feet or one and one-half per cent of the stand.

11 billion board feet - involved in endemic or normal infestation in which the average annual loss is estimated at 35 million board feet or about one-third of one per cent of the stand.

The total annual beetle killing in yellow pine for the State is therefore estimated at 80 million board feet with an average value of $2.75 per thousand board feet, a loss of $220,000 in timber values.

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WASHINGTON NOTES

Department Bulletin No. 1394, entitled "Normal Growth of Range Cattle," published by the Bureau of Animal Industry, contains some interesting records on the growth of cattle secured in the Bureau's investigations of stock poisoning plants at the Salina Experiment Station in Utah.

The weights were kept on an average of 108 cattle during the summer season - June to September, inclusive - for the nine-year period 1916-1924. The cattle were of average grade and comprised various age classes. Ample forage was available on typical mountain range at an elevation of about 8,000 feet.

The average gain for the season was 255 pounds, representing an increase of 41 per cent. The average daily increase was 2.43 pounds. The average gain in number of pounds was about the same for all age classes. The younger, lighter stock consequently showed the greater percentage of increase. The rate of gain was most rapid in the early part of the season, due in part to the relatively poor condition of the animals in the spring. At the end of the season the animals were making only slight gains.--R.R.H.

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Service Bulletin
U. S. FOREST SERVICE
(Contents Confidential)

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THE PROGRESS OF WOOD PRESERVATION IN THE UNITED STATES

By R. K. Helphenstine, Jr., Washington

In his address before the National Conference on the Utilization of Forest Products President Coolidge said "A tree saved is a tree grown." In the field of wood preservation an even higher degree of economy is effected. For example, a fence post that is properly treated will last three times as long as an untreated post. Hence it is obvious that a fence post treated means two fence posts saved. The same holds good with other forms of forest products.

Although the practice of injecting chemicals into wood to prolong its life has been in existence for a great many years, the commercial treatment of timber did not begin in this country until 1848, when a kyanizing plant, one which employs mercuric chloride as a preservative, was constructed at Lowell, Mass. This plant, which was originally used for the treatment of canal and lock timbers, is still in operation. About 1874 a treating plant using creosote was constructed at West Pascagoula, Miss. From that time until the beginning of the present century the growth of the industry was very gradual, and even as late as 1904 there were only 30 treating plants in operation in the United States. Since that time, however, the industry has made remarkable progress.

In 1909, or just 5 years later, the number of plants had more than doubled. The 64 plants in operation during that year consumed 51,431,212 gallons of creosote and 16,215,107 pounds of zinc chloride in the treatment of 75,946,419 cubic feet of wood.

In 1920 there were 115 active treating plants, or in other words, the industry in just another ten years had again nearly doubled its capacity. These plants treated during that year 173,309,505 cubic feet of wood, and consumed 68,757,508 gallons of creosote, 49,717,929 pounds of zinc chloride, 1,848,911 gallons of paving oil, and 1,772,084 gallons of miscellaneous preservatives.

In 1925, the latest year for which statistics of the industry have been compiled, a total of 167 treating plants were actively engaged in the preservation of wood. This represents a further gain of nearly 50 per cent in plant capacity since 1920. The consumption of preservatives in 1925 consisted of 167,642,790 gallons of creosote, 13,048,539 gallons of petroleum, 2,080,287 gallons of paving oil, 26,378,658 pounds of zinc chloride, and 331,591 gallons of miscellaneous preservatives. The total quantity of wood that was given preservative treatment during that year was 274,474,538 cubic feet, or ober 3½ times the quantity reported in 1909.

The importance of the wood preserving industry and the national service which it performs in helping to conserve the country's forest resources is coming into greater prominence each year. Evidence of this fact lies in the continued growth of the industry, as reflected by a steady annual increase in the number of treating plants in operation and a corresponding increase in the amount of material treated and preservatives used.

With a standing timber consumption rated at four and a half times that which is replaced by growth, the Nation must of necessity not only grow timber but must also practice the strictest economy in the utilization of the remaining supply in order to meet future requirements. Wood preservation presents one important channel through which such economy can be effected.

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REDUCTION OF MAN-CAUSED FIRES, D-7 (Cont.)

By James E. Scott

1. Direct Action

This phase doubtless means more in District 7 than elsewhere in the National Forest system. It means, on the Ouachita, for instance, the systematic establishment of acquaintance by our local officers with some 1500 Forest-resident families; development of that acquaintance through persistent personal contact to the point of mutual friendship and cooperation wherever possible, but in all cases the accumulation of essential information concerning these people and their interests on which alone can be based an intelligent effort to make of each of them a supporter of forest protection. It means the designing, preparation and hand to hand distribution of material which really fits their local situation, which marshals and presents the facts they can grasp and appreciate. It means a constant effort to broaden their interests and extend their horizon so that they may see the relation of fire in the Ouachita to State and National welfare and to their own family welfare.

The local forces must be equipped to supplement the individual personal contact and conversation with pictures, the printed page, lantern slides, motion pictures and facilities for showing these at public gatherings. In addition, we must supplement the local officers' work by bringing to these people the same message but in the broader, more highly organized form of instruction and entertainment represented by our traveling truck projects. Two of these projects, each equipped with portable electric light and power plants, projectors, slides, motion pictures and publications, and each being handled by an experienced ranger, are now in the field. A third is most urgently needed, and for the two now in use as well as for the local officers in their continual effort, new, fresh, and appealing material is our greatest need. On the two National Forests of Arkansas where one of these projects has been at work this year we have had 229 fires in 1926 as against 450 for the same period a year ago. No one can say how much of this reduction is fairly attributable to our Fire Prevention work. No one will deny, however, that this work is really being felt and is already influencing the record favorably. Like any form of education or advertising, it must be sustained. To sustain it we must have new material and equipment.

2. Indirect Action

Under this heading we seek to round out the direct prevention work among the local people by building up throughout the regions embracing and surrounding our Forests and among the general public a strong anti-fire sentiment based on appreciation of the value of the forest resources. Among other items in this phase, but perhaps the most important and promising, is our work with the schools and school children. Recognizing that our promise of a forest-minded people lies much more largely in the coming generation of citizenship than in the generation now upstage, we are giving special thought to the preparation of material which, without adding to already overburdened curricula, may be correlated with such prescribed studies as nature, civics, geography and manual training. The effectiveness of our work in this direction and the reception of our material by both teachers and children have been thoroughly tested. Letter after letter of most cordial appreciation of the service rendered reaches us from among the hundreds of schools with which we have established contact. Our sole serious handicap is the financial one, which is compelling us to restrict the service to a comparatively negligible few among the thousands of schoolrooms in our territory. For instance, the average mountain schoolroom is at best quite barren of visual educational material. We have designed a series of lithographed panel posters, each of which through a series of pictures tells the story of some phase of forestry or forest protection and the values thereof. Each of them would unquestionably inculcate in the minds of many coming citizens a genuine appreciation and love of the forest. We have been able to publish but one panel in an edition of 2,000 copies at a cost of $500.00. Small quantity production is necessarily accompanied by high unit cost. And more serious than this, we can but scratch the surface of a field of obvious fertility crying for cultivation.

In this whole field of indirect fire prevention action, countless opportunities exist to form partnerships between our ideas and private cooperators in a position to finance, and having interests of their own to warrant financing, production in form for public consumption. A few we have developed. Light and power companies, chambers of commerce, railroads, banks and many other agencies will provide the vehicles by carrying our message to our public. But we must have the material - particularly pictures and maps.

The traveling truck projects earlier mentioned serve also in the indirect action field with especially good effect.

3. Reduction of Danger

In this third and final phase of Fire Prevention, we must rely wholly on our National Forest forces to seek out every possible source of an avoidable fire and to caution, warn, and instruct as to elimination of the danger. Our sole need here is one that we can meet through our time budgets and through adequate field supervision.

This, briefly sketched, is our plan of attack. To exactly the extent to which we have succeeded in bringing about its local application under sustained, intensive methods, the desired results have followed. Under it we have seen "sore spots" on our fire maps cleared up - communities change their view of fire control from opposition to support - and on at least one Forest the job of Presuppression preparedness largely taken off our hands by a local people fully alive to the fact that their own individual and collective interests depend on protected forests. We have seen too a most hearty response to our Indirect Action effort, particularly in the schoolrooms and on the part of agencies with definite commercial interests dependent on growing forests and forested watersheds. Our whole remaining problem is to bring the work to the point of general application and effectiveness.

We do not envisage the complete elimination of the man-caused forest fire. That is not for our day and generation. But somewhere between 1,063 and the vanishing point, probably well under the 500 mark, there is for us an irreducible minimum annual number of such fires. We are out to attain that minimum and hold it once attained.

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FOREST PROPAGANDA AND FORESTRY

By P. Keplinger, D-2

I was much interested in the article appearing in the May 31 SERVICE BULLETIN under the above title and in the editor's curious comments thereon. Cuno effectively disposes of one phase of the question in the June 21 issue, but that phase was not the thing that struck me.

What I should like to know is, What the writer expects Women's clubs, Rotarians, Kiwanians, etc., to do; What is there for them to do in forestry, except talk? Would he have the Rotarians quit their present business and become foresters, and the Women's clubs become investors in forest lands? Neither seems to me to be practical. I have thought about it a great deal and I can see no future for any of these organizations in forestry, except in talk. There is nothing else for them to do, so why worry about it? Let them enjoy themselves.

As Cuno has shown, the "doing" part is being well taken care of (see also the Forester's statement before the Senate reforestation committee) in those parts of the country where forestry pays, and surely no forester would advocate "doing" anywhere else. Forestry practice is making wonderful strides when considered in relation to economic conditions, and the progress is being made by the men from whom one would naturally expect the action to come; the men engaged in wood industries, primarily the lumbermen. It will progress just as fast as economic conditions will warrant, and who wants it to move any faster? Even those who talk the loudest about "wood famines" and "devastation" agree with the statement of Chapman's in the February Journal and "have no particular fear of a lumber shortage viewed from the standpoint of being unable to secure this commodity."

No, as a matter of fact, it appears that we have two distinct forestry movements in this country - one producing talk and the other producing wood. The former is seemingly the most profitable, probably because in that line there is no such thing as overproduction.

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LOGGER USES TECHNICAL FORESTRY METHODS

By Leo A. Isaac, Pacific Northwest Exp. Sta.

Scientific forestry methods are hardly to be looked for or thought of amid the roar of the donkey engine and the crash of the mighty Douglas fir, felled under the pressure of present economic conditions in the Northwest. Nevertheless, the forester in his daily rounds finds a rapidly increasing tendency along that line among the men in charge. Some of the interest and enthusiasm can be traced to technically trained foresters who are gradually making their way into the field, but much of it is due to keen interest and insight of men who have developed with the industry. A striking example of the latter was found on the operation of the East Side Logging Company at Keasey, Oregon. Superintendent R. V. Lausman and his head faller, through a careful study of the conk rot on their timber lands, had determined that the portion of a tree from 16 feet above the highest "conk" to 8 feet below the lowest "conk" was not worth taking out. If the remainder of the tree would make one or two logs it could be profitably logged. The faller is furnished with a monocular field glass in order that he may carefully study the "conks" or "blind conks" on a doubtful tree and thus avoid cutting a worthless tree or leaving a partially sound tree stand.

The decay in this particular region happened to be caused by the ring scale fungus (Trametes pini) that occurs in the heartwood of the trunk and is detected by sporophores or conks and by swollen knots or blind conks.

It is of unusual interest to note that the findings of Mr. Lausman secured by work with his men in the field very closely coincide with the results of technical and detailed study by Dr. J. S. Boyce and published in Dept. of Agri. Bulletin No. 1163. It is definitely known that Mr. Lausman had no access to previous work on this subject until handed a copy of Dr. Boyce's bulletin by the writer.

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AIRPLANE PATROL

Airplane Forest patrol, covering North Idaho and Western Montana, started June 22.

Two De Haviland planes will fly out from Spokane, which is to be the regular base during the summer months. The two planes are in charge of Lieutenants Mamer and Henry, pilots, of the Army Air Service. Ranger E. J. Jost of the Forest Service is a regular observer.

Plans do not contemplate regular patrol, but rather the use of planes for special flights during periods of great fire danger, and for reconnaissance work on large fires.

Air patrol has proved its value as an auxiliary of other methods of forest protection, according to foresters and timbermen, and they approve its reestablishment by the Federal Government for the protection of our forested areas.--District 1.

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NEVADA AWAKENS INTEREST IN RANGE MANAGEMENT

At the instigation of Agricultural Agent J. W. Wilson of Elko County and Supervisor McQueen, a three-day range inspection tour was conducted over the Humboldt Forest, public domain and private range, July 1-3.

Governor Scrugham, Lt. Governor Sullivan, Director Creel of the Nevada Extension Service with six of his agents, Director Flemming of the Nevada Experiment Station, E. R. Sands of the U. S. B. S., Prof. Lehenbauer of the State University, U. S. Livestock Statistician Scott, representatives from the Southern Pacific Railroad, stockmen and others participated. Moving pictures were taken by the U. S. Department of Agriculture along the 230 miles covered, showing well managed and poorly managed range, poisonous plants, erosion caused by overgrazing, erosion checked by good range management, effect of too heavy and of proper grazing upon aspen, and samples of palatable plants and plants which were indicators of too severe grazing.

Charts depicted the movement of sheep from winter to summer range, showing trailing from 50-300 miles to the Humboldt Forest.

The trip was made by automobile, the county truck transporting beds and provisions.

Many of the visitors remarked that they had no idea such country existed in Nevada. Some excellent range was seen. The tour showed very clearly the results obtained by good range management on private and Government land, as compared with poor management on similar range. The trip was enlightening to all who participated. Supervisor McQueen unhesitatingly gives credit to County Agent Wilson for its success. Both worked hard and were intensely enthusiastic. It is hoped the reels will reflect the interest displayed during the tour.--District 4.

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WHAT IT PAYS TO MAKE A GOOD PR MAN

By E. L. Perry, Santa Fe

Necessity, 'tis said, is the mother of invention, and I'll rise to remark that she is sometimes a "red hot mama" as the current song goes.

The other night, while County Agent Bentley and I were running our picture show for the benefit of the "gente" of Cuba, there was suddenly a calamitous sounding noise in the interior of the projector, and the picture quit us cold. We made a hasty investigation and soon found that one of the drive belts in the far recesses of the machine had broken, and since it was one of the compact "suitcase" type most of its interior mechanism would have to be removed before the bolt could be repaired and replaced.

It looked like a sure case of having to tell the customers that the show was "tout fini" for the evening, but we had cut a wide swath so far and to take the airship off from their awe-struck vision was an obvious disappointment and Ma Necessity said NO. So we got busy and had an inspiration. We told the audience that the show would be suspended for a few minutes while a certain prominent citizen of the locality, who has a bent for that sort of thing anyway, made a few appropriate remarks. To say that the aforesaid P.C. was taken aback is to put it mildly, but he rose nobly to the occasion with a prompting kick or two on the shins, and made the few appropriate remarks. Then he made a few more remarks. Then he invited questions, comments, criticisms - anything but blows from the audience.

In the meantime ye scribe dived up to the shoulders into the complicated insides of the machine and the resulting activity must have somewhat resembled a dog digging out a chipmunk. Just as the impromptu orator had come to the end of his resources and was about to call it a hard day, we drove in the last screw, slammed the reels into the cases, the machinery whirred triumphantly, and the "Winged Guardian of our National Forests" resumed his thrilling flight across the celluloid heavens and we didn't have a single part left over!

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PLAGUE OF GRASSHOPPERS HITS PLUMAS

By D. N. Rogers, Plumas

Reports from the Rangers and stockmen on the east side of the Forest indicate a severe grasshopper infestation imminent for the coming grazing season. Accordingly, arrangements were made and two meetings held, attended by all of the stockmen concerned. The success of control work is entirely dependent upon the application of the poison to the grasshopper hatching grounds at the precise time when the grasshoppers first appear and before the flying stage. It usually requires two or three applications of the poison before the insects are entirely eradicated, since it seems that they hatch at intervals of two or three days apart. In handling the control work each permittee having an individual range will be responsible for the eradication on his own allotment. The community ranges will be handled under an associative head.

In 1919 a similar infestation was handled with excellent results, which meant then, as it will this year, a large saving to the stockmen on feed.

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DISTRICT 1'S PETRIFIED FOREST

There is a "Petrified Forest," located between the Gallatin and Yellowstone Rivers just north of Yellowstone Park.

Scattered along the ridge for a distance of fifteen miles are hundreds of well preserved stumps, exposed to view by the weathering away of a volcanic conglomerate matrix in which they were embedded in prehistoric times - presumably when the ancient Mt. Sherman volcano in Yellowstone Park was active. One of the largest stumps is 14 feet in diameter at the base and about 8 feet high. The best preserved and striking trunk is over 12 feet high. Because of its light color and the exposed position in which it stands, this tree can be seen from the valley many miles away, and is pointed out as a landmark to the tourists passing up and down the highway along the Gallatin River.--D-1.

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WASHINGTON NOTES

Fair's Bronze Dedicated: While Paul Fair was recently struggling to get the Sesqui-centennial exhibit of the Forest Service installed, a monument designed by him as a memorial of the Modoc Indian War was dedicated in California. The monument, of bronze on a base of lava rock, represents a grizzly bear with his shoulder pierced by a broken Indian arrow. It stands near the spot where General E. R. S. Canby was killed by the Modoc Indians in 1873. A crowd of 800 witnessed the ceremony of unveiling, which occurred on June 13.

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The Germ of the Priest River Station: "If scientific management of the Forests ..... is ever attempted, the proposed Priest River reserve, from the nature of its forest covering and the ease with which its timber can be marketed, will be found admirably suited for silvicultural experiments." Preliminary report of Forest Reservation Committee of the National Academy of Sciences, 1897.

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STANISLAUS BOASTS ANOTHER CONVERT

Mr. D. H. Steinmetz, Manager of the Standard Lumber Company, informed Lumberman Elliott recently that they were going to fell all snags and dead trees on their cuttings from now on, and that he had already given these orders to his Superintendent of Logging on the West side operation.

THE LOOKOUT TOWER

I recently saw a photograph of the Forest officers who attended the Fort Miley Conference in District 5, the largest gathering of U.S. Forest Service men ever held. Every man wore a uniform, and the few who were not wearing the District 5 standard Stetson had carefully removed their hats so as not to spoil the harmony of the picture! It was a good-looking outfit - the men looked the part.

Now the man who wrote recently in the SERVICE BULLETIN about "Uniform Uniforms" was, I think, partly right and partly wrong. It seems unnecessary for Forest officers to wear the uniform while on office or town duty. Here in Washington, Army and Navy officers do not wear the uniform as a rule, being required to wear it only one day each month - I suppose to make sure that the kids or the moths have not got away with some strategic part of it.

But in insisting on a reasonably uniform uniform, the District 5 writer hits the nail on the head. There ought to be a code of "Uniform Ethics." When some authoritative body creates this code, I hope it will frown on "fancy" shoes, shirts, ties, and hats worn with the uniform. A pink striped shirt, a cerise and purple tie, a sheik hat, and yellow buttoned shoes - these or any one of them can make the most orderly uniform look like a saxophone and a trap drum at a funeral. The uniform ought always to look simple, appropriate, sturdy, and used.--S.

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CATTLE BROWSE SOUTHERN PINES

By W. R. Mattoon, Washington

Injury by cattle to longleaf and loblolly saplings has not been generally reported. A band of Herefords grazing in a large pasture near Aiken, South Carolina, have done severe injury by browsing off the tips from longleaf and loblolly pines during the dry seasons of 1925 and 1926. Thousands of little trees from 2 to 4 feet in height were browsed off in May and June, 1926. The buds were the second set of the season, which formed during dry weather and resulting short pasture. The damage of 1925 is on the first set of terminal buds, and apparently occurred during the early spring. Both longleaf and loblolly show excessive bushing from the damage of 1925 and are on the way to further deformity next year. The land and stock belong to the Woolsey brothers of Aiken. The injury by grazing was observed in June, 1926, by Extension Foresters H. H. Tryon of South Carolina, and the writer.

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Service Bulletin

U.S. FOREST SERVICE

(Contents Confidential)

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CALIFORNIA SPARK ARRESTER STUDY

By J. R. Berry, D-5

One of the truths learned from the 1924 fire season was that the Forest Service must adopt a more strict and comprehensive code of fire prevention on timber sales and must enforce it with greater firmness.

As a result of the conference of Forest Management men held in Ogden during March, 1925, new standards were set up which strengthened the old requirements and incorporated many new ones. Some of these new requirements, including one which required that all wood-burning donkey engines must exhaust outside the stack, were objected to by the lumbermen's organizations of California.

A meeting was therefore arranged in San Francisco for June, 1925. At this meeting Colonel Greeley and other Forest officers discussed with the lumbermen the whole question of timber sale fire protection.

The lumbermen agreed that the outside exhausting engine would throw no sparks and would be ideal from a fire prevention standpoint, but maintained that without inside exhausts the steaming quality of their present equipment would be materially affected.

It was decided that the California Forest Committee, representing the Forest Service, the lumbermen, and other interested organizations, should determine the effect of outside exhausts on wood-burning engines, and should investigate the possibility of constructing a 100% efficient spark arrester.

Mr. S. R. Black, Secretary of the Committee, undertook this study and reported his finding in November, 1925.

His time studies, made in most instances with the aid of some Forest officer, indicate that the outside exhaust is not feasible for the present type of equipment when yarding over 600 feet, but that it is feasible and should be used when moving a donkey overland.

Demonstrations with all types of spark arresters were made by pulling in a log at night when all sparks could be readily seen. It was found that none of the arresters then in use were satisfactory, and that holes in the stack, loose-fitting arresters, and other mechanical faults were in many instances responsible for a large number of sparks.

Mr. Black believes that the ideal spark arrester for California conditions should meet the following requirements:

1. Should not interfere with the draft.
2. Should prevent the escape of sparks large enough to hold fire until they reach the ground.
3. Should be visible for inspection and accessible for repairs.
4. Should provide free natural draft when exhaust is not entering stack.
5. Should minimize the element of human carelessness in its operation.
6. Should not interfere with flue cleaning.

The two most promising types, the Bruce and the Jones, have been improved by redesign, stronger construction, more careful manufacture, and the use of oblong mesh screen to a point where both are very efficient arresters of the automatic closing type. These are being recommended by the Forest Service for use in California.

Another arrester of the screenless type, the Anderson, has been installed in California and when demonstrated was absolutely 100 per cent. However, further examinations will be made before it is accepted as satisfactory.

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Maybe a Rose would Smell Just as Sweet by another name, but we doubt that we would have been able to read that little story about alcohol and red leaves so many times if it had been "Effect of C_2H_5OH on Chlorophyl."

OF SLOGANS AND COOPERATION

By F. V. Horton, Umatilla

We read Mr. Simson's article with a lot of interest and the aid of a dictionary. Our thermometer stands at 90° today and we make haste to submit the following which is our idea in words of one syllable.

If the use of slogans to sell an idea is "preaching at," then we must accuse the makers of Occident Flour, of Holeproof Hosiery and B.V.D's of "preaching at." And if the public is dully, or otherwise, resentful of this preaching we haven't been able to detect it. Also it is safe to state that as to the value of this preaching there can be no doubt.

We hadn't ever heard the "Forest Vandal" expression before in our 12 years with the Service; so we ask whether the change in the attitude of the lumberman is the result of soft soaping or whether some of the slogans and other propaganda have at last had some effect.

Cooperation in fire prevention is not a new idea with the Forest Service, as every smoke-eating Forest officer in this District well knows; and incidentally can you vision the B.V.D. Company running an ad in the SATURDAY EVENING POST as follows: "Dear Public: Please cooperate with us by buying more B.V.D's?"

No claim has been made to originality of the Vigilante idea, but seriously, fellow officers, how would you like to have a bunch of 'em running loose on your own Forest? Personally we are of the opinion that our fire law enforcement work cannot be turned over to anyone. It is our own responsibility.

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LOOK, WORLD!

By E. S. Shipp, Washington

On the bosky banks of a mid-west stream sits a kid fishing. His catch, judged by numbers, is gratifying. It is of a sort much despised by the sportsman angler, yet the kid thrills at each take. Upstream, a man with rod and creel wades hip deep toward the swifter water and casts his line. Presently, holding a frantic, glistening prize aloft, he shouts, "Hey kid, you gotta wade deep, and spit on your bait, to take these fellows." Ere long with bulging creel he comes ashore and stops to scrutinize the kid's catch. Harsh, though ingenious is his comment, "Chuck 'em, bub, you didn't get your bait back." The kid, abashed, dumps his catch into the stream.

The Service negative collection numbers more than two hundred thousand, for the most part taken without much wading or conjuring of the bait, and few if any thrown back.

There is enough material in this accumulation to make a negative one foot wide and 13 miles long; and it has cost in raw stock alone more than thirty thousand dollars. Add to this sum, the cost of spoiled material, time spent in taking, subsequent handling, and - "We didn't get our bait back."

Negatives more than a mile in length are added to the collection each year, and discouragingly few measure up to the standard of those made 25 years ago. How come? It started some two decades back, this quest of the easiest way. Here and there, a Forest officer put aside the tripod and focusing camera that had served his purpose so well, and demanded lighter equipment. Before long the old herd instinct got in its work, and the stampede started for the tricky little pocket kodaks.

The champions of these hybrid little cameras, with clever vocabulary, and skillful presentation of their case, persuaded the photograph committee to adopt them as the standard Service equipment. With these cunningly devised little instruments and "How to make good pictures" we sought to substitute rule of thumb methods for the rough road of experience. It didn't work then, and it's not working now.

The Pocket Camera is not exactly our pet prejudice; it has its place, still it should not be permitted to crowd larger cameras entirely out of the picture. Perhaps in the future some genius may endow them with the ability to automatically produce good negatives. But those now living will not be interested. What can we do about it, and what's the use? We can take on a bit of extra ballast in the shape of tripod and focusing cameras of sizable dimensions. From the appearance of the image on the ground glass, we learn to judge light values, the surest guide to correct exposure, and to compose our pictures so that they will tell what we want them to say. What's the use?

This is the age of pictures. The world would rather look than listen. Increasing interest in visual education, the demand for, and use of pictures indicates we respond more readily to visual than to reasoned impressions. The commercial world seized upon this, our apparent weakness for pictures, and turned it to its profit. With pictures, and supplementary slang and slogans, they create a market for their wares or service.

The Forest Service, too, keeps a finger on the pulse of a picture-loving public, and sells Forestry to those who prefer to "See by the pictures."

Last year the Service photograph laboratory filled sixty-seven hundred requisitions, an average of one every 20 minutes, made a print 60 miles long, 5 inches wide, weighing 4 tons, and has started to make what promises to be a larger one this year.

We need better pictures, and bigger ones. If the world wants to look, let's show 'em.

TRAVELING FIRE PREVENTION PROJECT

In Mr. Scott's article on Reduction of Man-Caused Fires in District 7, he spoke of a Traveling Fire Prevention truck. We asked for statistics concerning it and here they are.

The Southern Appalachian Traveling Fire Prevention Project which has been active on the Alabama, Cherokee, Florida, Nantahala, and Unaka Forests throughout the past eight months terminated its activity for the present fiscal year on May 31, at Bristol, Tennessee. Ranger Garner B. Anchors, in charge of the project, came into the District Office on June 2 to go over the past work of the project, line up next year's activity, and seek a little intensive training in photography.

The activities and costs of this project to June 30 are summarized as follows:

Period of actual field service, Oct. 1, 1925, to May 31, 1926 - 8 mos.

Cherokee N. F.
October, November and April .... 3 months
Engagements - - 58 Attendance 7,875

Alabama-Benning
December .... 1 month
Engagements - - 16 Attendance 6,500

Florida N. F.
January - February .... 2 months
Engagements - 31 Attendance 3,860

Nantahala N. F.
March .... 1 month
Engagements - 23 Attendance 3,342

Unaka N. F.
May .... 1 month
Engagements - 21 Attendance 5,550

Total engagements	149
Aggregate attendance	27,127
Travel mileage	7,133 miles
Average attendance	182

COSTS - F. Y. 1926

1.	Truck & accessories	$893.75	
2.	Projector & accessories	552.55	
3.	Light & power plant	289.82	
4.	Truck maintenance	70.67	
5.	Light & power plant maintenance	72.92	
6.	Projector maintenance	3.59	
7.	Camera & accessories	233.36	
8.	Camp outfit	40.65	
9.	New motion pictures purchased	139.99	
10.	Conductor's travel & subsistence	576.23	
11.	Truck operation	376.71	$3,250.24
12.	Salary of Conductor (9 mos.)		1,440.00
		Total	$4,690.24
	Cost per capita of attendance	$0.17	

Though every Forest which the project has served shows a reduction in man-caused fires for 1926, as against 1925, no undue optimism will be indulged in and no claims made as to immediate effects of THIS work on our fire record. Suffice it to say that everyone in the field and district office who has been concerned with the project agrees that its work is thoroughly worth while and should be made a permanent feature of our Fire Prevention effort.

On this basis we shall send the project to the Florida, Alabama-Benning, Nantahala, and Cherokee during the F.Y. 1927 with special attention to the North Georgia portions of the Nantahala and Cherokee Forests. It is hoped that we can re-equip the project early in the year with a better truck and a heavier light and power plant. It is hoped too that Ranger Anchors will continue in the work, although his personal affairs may make this impossible.

Following is a statement of average annual costs for a project of this kind in permanent service. We definitely plan on a third project for July 1, 1927.

Permanent Estimate of Costs Per Year

1.	Truck and accessories (Dodge or equivalent)	$400.00
2.	Truck maintenance	75.00
3.	Projector and accessories (includ. maintenance)	150.00
4.	Light & power plant (including maintenance)	150.00
5.	Camera & accessories	50.00
6.	Camp Outfit	25.00
7.	New motion pictures	150.00
8.	Conductor's travel expenses	750.00

9. Truck operation*	$500.00
10. Conductor's salary	2400.00
Total	$4650.00

*10,000 to 12,000 miles per year.

Average number of engagements per year	200
Average attendance	200
Total yearly attendance	40,000
Average cost per capita of attendance	$.116

The per capita costs in the comparatively thinly populated National Forest zones can probably be cut to a dime. As itineraries spread out to include the more densely populated valley regions, these costs will doubtless scale down to a nickel. We don't believe anyone can buy a bigger 5¢ or 10¢ worth of fire prevention educational effort and get as high a percentage of effective delivery of the goods in many other mediums of effort in this field.

By the way, the life of a director of our traveling fire prevention school is no "bed of roses." He is the king of progressive travelers and his days blend into nights with monotonous regularity. The boys on our two trucks are doing wonderful work. Where did the money come from? It was dug out of our meager allotments. How? Because we want to do it badly enough.

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PORCUPINE STUDY ON THE SAN JUAN NATIONAL FOREST

By F. R. Johnson, D-2

Dr. Walter P. Taylor and Mr. E. E. Horn of the Biological Survey, who have been studying porcupines, with particular reference to means of control, in District 3, have extended their studies to the southwestern part of Colorado.

Porcupines have caused considerable damage in the western yellow pine type in Colorado. In the vicinity of Pagosa Springs all of the trees above 4½ feet were tallied on six acres of experimental plots. There were 624 trees on six acres, of which 119, or nineteen per cent, were damaged to a greater or less extent by porcupines. The worst feature of their work is that most of the trees damaged were saplings or young poles which were needed to replace the overmature trees being cut at the time of the tally.

Dr. Taylor reports that porcupines on the Blanco district are abundant. He further states that the porcupine is a more important factor than mistletoe or insects in relation to forest management in this locality and that if management is to be adequate account will have to be taken of the porcupine. One interesting feature of his study in this locality was the discovery that the porcupines were feeding abundantly at this time of the year on mistletoe. If they confined their diet to mistletoe instead of yellow pine bark, our difficulties along this line would be ended. No effective means of control have been figured out.

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VALUE OF COST RECORDS TO ADMINISTRATION

By Paul H. Roberts, Sitgreaves

Modern business without accurate cost accounting systems would be doomed to failure. According to one authority, probably the most outstanding result of big business as "she is today" has been the development of cost accounting systems. In order to sell at a profit in competition with other concerns, a business manager must know the cost of production and be able to remedy excess costs. In other words, a business must operate efficiently. The greater the efficiency the greater should be the profit, other things being equal. And a business in order to survive must sell at a profit.

Shoemaker says at the outset of this article, "I have but little faith and less hope in the value of a cost of expenditure record as an aid to National Forest administration, or as a basis for judging and comparing Forest Service efficiency." The Forest Service is striving to operate with the greatest efficiency possible. Why, then, is not costkeeping in a far flung organization like ours, just as, or even more important, than in a compact business concern?

In regard to the accuracy of the present figures as showing true actual expenditures, this in no wise affects the reason for having such true actual figures, and as weaknesses show up in the present system they will undoubtedly be corrected.

Next as to value of comparisons. The value of comparisons is probably somewhat like the value of statistics; it depends on how they are used. Probably we could not make a good comparison between the D-6 Ranger on a fire Forest, and the Utah Ranger on a grazing Forest. Although at that, the comparison may be worth while. But we can make a logical comparison between the D-6 Ranger on a fire Forest and a D-5 Ranger on a fire Forest, or between a D-3 Ranger on the Sitgreaves Forest and a D-3 Ranger on the Coconino Forest. By making reasonable allowances for influencing factors we should be able to decide whether something is wrong, if the Sitgreaves unit costs are too high. We can then search for the thing that is wrong. Comparisons must be made intelligently and used likewise.

We stress, for example, the efficient use of time. Are not cost records of use in discovering inefficient use of time? I like to look at cost records. I like to compare the Sitgreaves costs with costs on other Forests. I like to reason out the cause of discrepancies, and, if the reasons for the discrepancies are not apparent, to search for the reason. In regard to the example of the Reconnaissance parties cited by Shoemaker, we want results from reconnaissance or every other Forest Service activity. We want detail and accuracy, but we want it at a minimum cost to give these results.

If there were two reconnaissance crews in the same District working under practically the same conditions, and one crew was getting detail and accuracy for $4,000 per season, and the other was covering the same amount of acreage, getting detail and accuracy for $8,000 per season, someone would begin to look for the reason for the difference in cost. Why? Because, if we can get the detail and accuracy which we need for $4,000 per year or one cent per acre, why pay $8,000 or 2¢ per acre? Not only that but we can take that extra $4,000 and get more done, or devote it to other useful purposes. We want results, but we want results at the minimum cost to produce those results. As we continue to collect cost figures they become more valuable. Better comparisons are possible, better average figures are obtainable, and so on.

They are interesting, they make us think, they create a spirit of competition, they are essential to the conduct of any business, and, well, I'd hate to tell the general public that I didn't know what it cost to administer a timber sale, the grazing of a cow or a sheep, or to handle our fires.

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WASHINGTON NOTES

Forester Gets Doctor's Degree: Clarence F. Korstian, Associate Silviculturist at the Appalachian Forest Experiment Station, has won a Ph. D. degree from Yale. Korstian spent the past school year at Yale University working on a cooperative project of the experiment station on the germination and early growth of the oaks. In this study he used material obtained both from the Southern Appalachian region and from the vicinity of New Haven. His thesis is to be published later. Korstian is one of the few foresters in the United States with a Ph. D. degree, and although he can now be known in technical circles as Doctor, it is understood he still shies a little at the title.

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Hamilton Resigns: Miller Hamilton of the Branch of Public Relations has resigned, effective August 1, to take charge of the Public Relations Department of the Marmon Motor Car Company, Indianapolis, Indiana.

Mr. Hamilton has been in charge of the press work of the Service for the past three years, having joined the Service in April, 1923. For the past two years he has also been Secretary of the American Forest Week Committee and contributed largely to the successful campaigns of 1925 and 1926.

Mr. Hamilton is a newspaper man by profession and has written for many of the leading publications of the country. In Indianapolis he will be at home, as he is a native of the Hoosier State.

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A Position is Open in the Massachusetts Forestry Association. The duties of the position consist of giving lectures, showing motion pictures, soliciting members for the association, and giving advice on forestry matters in connection with its town forest movement. The salary will vary according to the experience of the man chosen for the position. Anyone interested should communicate with Mr. Harris A. Reynolds, Secretary, Massachusetts Forestry Association, 4 Joy Street, Boston.

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THE LOOKOUT TOWER

Henry Ford devotes a chapter in his recent book, "To-day and Tomorrow," to the subject "Saving the Timber." In working out close utilization, both in the woods and in the mill, Mr. Ford says they have almost forgotten which is the product and which the by-product. Brush disposal, he says, nominally costs $1.25 a thousand feet, but saves 75¢ in skidding. The old lumberjacks objected to beds, sheets, shower baths, and other comforts. And he ends by saying that we have plenty of timber if we learn how to use it.

I suppose the quality that keeps Ford well in the lead in industrial technique is his ability to see things simply and honestly, clear of the fog that clouds the brain and the tanglefoot of habit that snares the feet of the average man. It is a pity that we foresters have spent so much time supporting the superstition that it is solely economic conditions rather than lack of gray matter that is responsible for forest devastation and timber waste. If you will analyze private timber-growing projects, you will find in the main that they came not from unusually favorable economic conditions but from some keen mind and bold spirit that showed how to do it.--S.

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Service Bulletin

U. S. FOREST SERVICE

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THE FIRE SITUATION

The fire losses on the National Forests from July 1 to July 20, 1926, as gauged by the expenditures from FF in the work of suppression, were nearly three times as great as in the corresponding period of 1925 and one-third greater than in the bad fire season of 1924. The expenditures reported for this period in the three years were $377,616 in 1926, $106,133 in 1925, and $288,127 in 1924.

The destruction this year has been greatest in the Northern District, and the situation there remains critical. The report for the second ten days of July showed an expenditure of $165,000 during the period, and the District Forester reported on July 25 that the estimated expenditures since July 20 were running $20,000 a day. The number of fires started during the period was 413, with 124 burning on July 20, of which 73 were Class C. The Kaniksu and Pend Oreille Forests suffered most, although the situation was very serious on the Coeur d'Alene, Kootenai, Blackfeet, and Clearwater. The number of fire fighters called for by the Supervisors could not be rounded up from civilian sources and troops from Fort Missoula were secured to assist in fighting a large fire on the Blackfeet, and from Fort George Wright at Spokane to assist in fighting the fires on the Kaniksu. The District Forester wired on July 27 that the weather conditions were still unfavorable on account of high winds and lightning storms. The situation on the Kaniksu was reported grave, 36 Class C fires burning and 65,000 acres burned over. On the Blackfeet Forest the Hay Creek fire spread badly, covering 10,000 acres on the Forest and a large area in Glacier National Park; on the Olney ranger district of this Forest lightning fires of 4,000 acres were reported. Bad fires continued to burn on the Coeur d'Alene and Clearwater, one fire on the latter Forest reaching 4,500 acres. At last accounts 2500 men were fighting the fires in this District. In response to a telegraphic request from the District Forester that six men from other Districts who are competent to handle fire crews report at Spokane as soon as possible, the Washington office arranged with the District Foresters at Denver and Ogden to furnish three experienced Forest officers from each District, and information is received that the men are on their way.

In the California District the FF expenditures from July 1 to July 20 were $102,200, as against $13,000 in the same period of 1925 and $150,000 in 1924. No report has been received from this District since July 22, when 318 fires were reported as having started during the second ten days of the month. Large fires were burning on Bogus Creek, on the Klamath, and on Mount Rose, on the Tahoe. At the close of the period temperatures were high with low humidity in Northern California, and more favorable conditions prevailed in the southern part of the State.

Lightning storms accounted for 319 of the 397 fires reported as having started in the North Pacific District during the second ten days of July. Fifty Class C fires were burning at the close of the period on Forests in all parts of Washington and Oregon - the Chelan, Columbia, Colville, Mt. Baker, Olympic, Rainier, and Wenatchee, in Washington, and the Crater, Fremont, Ochoco, Santiam, Siskiyou, Umatilla, and Umpqua, in Oregon. Telegraphic advices from the District indicate that atmospheric conditions were never known to be worse than during the period but that they had improved considerably at the time the wire was sent, July 24. The FF expenditures in this District in the first twenty days of July were $95,300, as against $17,296 in 1925, and $28,637 in 1924.

An interesting sidelight on the difficulties encountered in securing men to fight the fires is gained from a letter written by District Forester Granger on July 19 to the District Inspector of Immigration at Spokane, a copy of which was received in Washington. An emergency existed on and adjacent to the Colville Forest, on which over 500 men were fighting the fires. Both the local labor supply and the Spokane labor market had been exhausted by calls for fire fighters from the northern tier of National Forests in Washington and Idaho. A call for 50 or 60 more men came from Supervisor Pagter of the Colville, and it was found that the only practicable source of supply was in the Dukhobor colony near Grand Forks, B. C. These men are said to be good fire fighters and enough of them could be secured, but the local immigration officials would not permit them to enter the United States, as the colonists are regarded as highly undesirable immigrants. In view of the desperate nature of the emergency, however, a higher official to whom the District Forester appealed authorized their being brought over the line with the understanding that they would be kept only as long as needed in handling the critical situation and that the Forest Service would guarantee their getting back across the line at the end of the emergency. The District Forester promised to have them kept under constant guard by one of our men and taken back to the line under his charge.

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FORESTRY HAS A FIELD DAY

By W. R. Mattoon, Washington

Twenty years working of a Forest Service planting plan!

Three hundred and fifty people from farms out to see the young planted forests and hear talks about putting loafing acres on their farms to work! That is what occurred on June 22 on the Great Bear Farm near Fulton, Oswego County, N. Y., as the result of united State forestry activity.

There are many acres of white pine, red pine, Scotch pine, European larch, and native tamarack of many ages and in many different mixtures and spacings. Altogether some 400,000 conifer seedlings have been planted on some 300 acres of old farm land since 1906. And the work is still being carried on by the originator of the plan and owner of the farm, F. A. Emerick of Oswego.

Back in 1906 Mr. Emerick got the idea of protecting the lands about his Great Bear Springs - of practically national reputation - by forest planting. Where should he go for advice? The New York State Conservation Commission was not then functioning to any considerable degree in forestry extension, so the Forest Service at Washington was appealed to. As a result Allen S. Peck, then a forest assistant and now District Forester at Denver, Colo., went to Fulton and, after a study of local conditions, drew up a planting plan. The landowner adopted the plan and has since used it as a guide for extensive plantings. Some revisions have been made by the State conservation commission.

The conditions then and now, both as to a source of planting stock and as to opportunity for getting advice on forest planting, make a strong contrast. Small trees at that time could be procured only from commercial nurseries. The people of the State can now count upon the assistance of the conservation commission at Albany, which is ready with sturdy little trees at $2 and up per thousand, excellent publications, and personal advice, and of the New York State College of Forestry at Syracuse and the New York State College of Agriculture at Cornell, both with extension departments offering free services.

The visitors at the field meeting were shown a dozen different plantings, by guides well prepared with a good line of information. Signs, printed on wall board and attached to planted trees along the roadways and at the openings used by the inspection parties, indicated the species and age of the trees and the spacing used, or carried such slogans as the following:

> PLANT TREES and Provide an Education for your Children or an Income When They are Grown

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TIMBER—The One Crop that will grow where others fail and One Crop for which there will be always a constant demand.

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38 People Planted 233,000 Trees in Oswego County in 1926.

. . . . . .

126 People Have Planted 1,764,050 Trees in Oswego County Since 1909.

Following the inspection of the trees and a basket dinner at noon, the people sang under the direction of a trained leader and listened to talks by the owner of the farm, F. A. Emerick, C. A. Taylor of the Extension Service, College of Agriculture, W. R. Mattoon, representing the forestry interests of the U. S. Department of Agriculture, Hon. John D. Clarke, Congressman of the 34th New York District, and co-author of the Clarke-McNary law, C. R. Pettis, Superintendent of State Forests, Paul D. Kelleter, Director of Forestry Extension, State College of Forestry at Syracuse University, and S. L. Strivings, Master of the State Grange.

The plantations furnish a veritable mine of information. Red, or Norway pine, and European larch are outstanding successes. The red pine is straight, vigorous in growth, and without damage by insect or disease. Its branches are pruning off much better than those of the other pines. The European larch is a blue ribbon prize winner. It has outgrown all other conifers, in about 15 years reaching heights of 30 to 40 feet and diameters of 6 to 9 inches. The branches are slender and readily broken by snow and sleet. Perhaps best of all, the wood lasts well in the ground and is regarded as a great friend of the farmer in furnishing fence posts of good durability. The European larch is decidedly a dry-land tree. Unlike our native swamp tamarack, or larch, it is at home on average well drained uplands. A few of the native tamarack may be seen in the plantations, ranking smaller than their European cousins.

The Conservation Commission unreservedly recommends the planting of larches in the fall. Both species are deciduous and begin very early in the spring to swell their buds. Fall planting is advised in order to avoid digging up the little trees with pickaxes in the frozen ground of the seed beds. Fall planting is also advised by Mr. C. R. Pettis, State Superintendent of Forests, for pines in sheltered locations where the planted trees will not be exposed by winds sweeping off the protective layer of snow. This extends the period of planting very advantageously by about two months in the fall.

Seventeen million trees were shipped out of the State nurseries this spring in 2,240 separate shipments, according to State Superintendent Pettis, and more than twenty million will be available for the public during the planting season of 1926-1927.

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FIRE LINES BUILT BY MACHINES

By Stuart B. Show, D-5

All of us, when laboring on a tough piece of fire line, have prayed for the day when hand work would be obsolete. That happy day is brought measurably nearer by the success of a recent experiment I saw on the Fruit Growers Supply Company operation on the Lassen.

The equipment consists of a Best 60-tractor (10-ton) and a specially constructed V-shaped drag. The drag is built of manganese steel plates, and is about five feet on the sides and three feet wide at the back. The sides are straight, about one foot high, with a solid horizontal plate at the midpoint. The top of the drag is loaded with boulders held in place by cross partitions to increase the weight.

In operation, except on very rocky ground, the drag digs a furrow some six inches deep and three feet wide. The dirt is shouldered out, forming a bank about one foot wide on each side, giving a total width of mineral soil of around five feet. Brush, reproduction, old logs up to two feet in diameter, squaw carpet, and lava boulders up to 300-400 pounds in weight are mowed down or shoved aside with ease.

Something like a mile of line an hour, requiring little hand work to touch up, can be built. Supervisor Durbin of the Lassen, on whose Forest the experiment was made, figures that the equivalent of work done by hand would cost at least $100. The cost by the tractor method is not over $4.

As Bill says, at some future date we'll hold a guard meeting, stick up a McCleod tool before our guards, and wait to see who is the first to ask what that queer looking thing is. Then some gray headed Forest officer will reply, "Well, boys, that was what we used to dig fire line with way back in 1926."

The experiment opens enormous possibilities in cheap and rapid line construction where the ground is not too steep or rocky. Hats off to the Fruit Growers Supply Company!

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WHY THEY FAIL

By J. H. Billingslea, D-6

Col. Greeley is much concerned over the small number of eligibles resulting from the Junior Forester examination, one reads in the minutes of the 1145th meeting of the Service Committee. Where is the trouble? To my way of thinking the large number of failures may be traced to one or all of five underlying causes:

First, the character of the examination, which is highly theoretical and deals largely with problems seldom met with in the field except by specialists of large experience.

Second, the time allotted is far too short to do justice to the questions, except by those possessing nimble minds that function quickly. The true student who thinks things out is heavily handicapped.

Third, too many of the questions demand a retentive mind capable of being crammed for a brief period with a load of information of little value. The questions in dendrology are a good example.

Fourth, the failure, until recently at least, of many forest schools to regard the Forest Service as a desirable field for their students on graduation.

Fifth, the method of rating, about which most of us know little except from the ratings received by individuals with whose ability we assumed we were acquainted.

I graduated from the forest school of the University of Washington in 1914, but did not take the Junior Forester examination until 1922. My reason for this was not any fear of the examination but largely my greater interest in the administrative work of the Service, as compared to the technical studies usually assigned to a Forest Assistant.

Administrative work and two summers of timber survey, in yellow pine and Douglas fir respectively, as a Ranger and Acting Deputy Supervisor, covered some 2½ years on four Forests located in three Districts. This outline of my Service work is, I feel, essential to bring out more clearly some points touched on herein.

I recall very clearly some of the 1922 questions in Silviculture, questions upon which one could write page after page. One usually wrote at length until the time was noted, and then slighted the last few questions on the subject.

It would seem that a degree from an accredited forest school, or, if still an undergraduate, a certificate that the prescribed course had been satisfactorily completed, would cover questions in forest management and perhaps in other subjects.

One of the questions in dendrology read something like this: "Name the principal forest regions of the United States, and give the five most important trees in each region by genus and species." Quite a task for the memory, but the question may be worth while.

There was a time when all of the forest schools, before some of them became colleges of logging engineering, held seminars for the seniors to prepare for this examination. Trial examinations were held. This procedure, I understand, holds at California, where a man does not even attempt the examination unless the Dean holds he is fit. The same no doubt is equally true of many schools, but I fear that in many cases students gain the impression that greater prestige goes to those fitting themselves for private work.

In regard to the rating: I cited briefly my experience in the Service on which, with several years of private work, I was allowed 75. Would it be possible for anyone in the Service to rate 100 in experience?

I have imagined the papers are rated on points similar to judging the prize dogs at a bench show, with the result that many of the successful applicants have good points but are poorly balanced. And many a good all-around man who failed to make the required 70 is lost to the Service and goes into private employment.

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TIMBER

By H. D. Cochran

Timber marking has been one of the popular pastimes at the field Ranger meetings held in Colorado and Wyoming this spring. It is the old stunt - a board of highbrows "marks" (in a notebook) a strip of trees all tagged and numbered and then turns loose the bunch with instructions to harvest the crop. In most of the meetings there were from 250 to 300 trees tagged in a strip so located as to include the largest possible variety of conditions. In one case these conditions graded from a badly stagnated stand in need of heavy cutting to young thrifty poles requiring only thinning.

Marking was done with earnestness alike by Rangers, Supervisors, D. O. men and Assistant Foresters - yes, we had one of the latter. Borers (increment) and tapes worked harder than the markers. It was easy to see there was going to be a reason for everything, right or wrong.

Then would come the grading of papers - a tense moment - followed by a recheck and discussion. If the marking was earnest, this part of it was downright zealous, and at every meeting the marking board had the benefit of some real expert advice - showing their broadmindedness by changing a few. Next time we can expect better results from them too.

Says Forest Management: "The noticeable thing about all the meetings was the way the men took hold. Invariably they displayed keen interest, and the manner in which they grasped the principles we are seeking to impart was mighty gratifying. I am convinced that this outdoor classroom is the most interesting to the men and is by long odds the best way in which to put across a real conception of the principles of proper forest management.

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TOPOGRAPHIC MAPS AND GRAZING RECONNAISSANCE

By J. O. Stewart, D-4

From the initiation of grazing reconnaissance in District 4 in 1911 up until 1922, it was customary where satisfactory maps were not available for reconnaissance parties to make contour line maps, the spacing between lines representing a difference in elevation of 100 feet.

Four years ago it was decided that the mapping costs were more than were justified, and that an effort should be made to develop a style of map that would cost less and at the same time meet the requirements of a map which would serve as a satisfactory base for grazing reconnaissance, so a style of map was adopted on which drainage was shown by standard symbols, and ridges were shown by dashes. That was unsatisfactory as no idea of degree of slope could be obtained from the map. The following year the so-called "form line" method was adopted to show the contour of the country. Form lines are, in effect, broken contour lines, showing them as they would appear on the crests of ridges, but no lines were shown on general slopes or crossing bottoms of hollows and canyons. The standard symbols for streams and intermittent streams were used.

Topography can be easily visualized with such a map.

The office of Engineering establishes control by triangulation methods; 20 to 25 points are located per township for which elevations are computed. Using these points as a base to work from, the reconnaissance field men make the form line maps by triangulation methods, using the ordinary 15-inch square traverse boards and open sight alidades.

Not only the topographic map is made, but type lines as well are located by triangulation in those cases where type lines and topographic features are not in the same place, such as the top of a ridge or bottom of a canyon. This makes for greater accuracy in establishing the location of type lines on the map as against the old method where it was necessary to pace in order to establish the location of type lines or estimate their location on the contour line map with the eye.

The reconnaissance man exercises as great care in writing up the types as formerly by passing through the types in such a way as to arrive at the average density and composition, but plans the day's work so that he can pass through the types and also go the points he wishes to occupy for topographic mapping. By this method non-effective travel over the country is cut to a minimum.

The largest item in reducing costs is the fact that the topographic map and type map can be made in one trip over the country while when making contour line maps it was necessary to go over the country twice; once to make the topographic map and again to make the type map.

It was found that reconnaissance of the same standard as formerly and form line maps could be made at 50 to 60 per cent of the cost of the work when contour line maps were made.

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WASHINGTON NOTES

The Chief Qualifies as a Dirt Forester. (From the Christian Science Monitor): "Thoroughly convinced of the forestry opportunities of northern New England and believing in the tremendous possibilities of Vermont hillsides for the cultivation of trees, W. B. Greeley, Chief Forester of the United States, has bought a farm in East Calais on which he is planning to 'practice what he preaches.' His family is occupying the farm as a summer place and the chief forester himself has just returned to his duties in Washington, D. C., after making a brief visit with friends in Montpelier.

"The place in Calais was bought in April of this year. It contains 100 acres. The new plantings on it will be chiefly of white pine and Norway and native white spruce, and the timber now standing will be improved by selection and improvement cuttings, to get a stand of the most desirable commercial trees.

"'The important thing,' says Mr. Greeley, 'is to improve the quality of the woodlot. Climatic conditions are favorable for tree growth in Vermont and on many places new planting is not necessary but the poor species should be cut out, so that the better species may have a chance to develop. Planting is desirable on cut-over or pasture land.'"

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A Forest Service Edison: Mr. Rolf Thelen of the Forest Products Laboratory, Madison, Wisconsin, has the distinction of having had issued to him by the United States Patent Office seventeen letters patent covering as many different inventions. The patents have to do entirely with the technique of drying lumber by artificial means. They cover not only dry kilns and devices for their control and operation, but also processes of seasoning wood as well. Although all seventeen of these patents have been issued officially in Mr. Thelen's name, the invention in each case has been dedicated to the public service.

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THE LOOKOUT TOWER

Is the poor old "inferior" species such a curse after all? In the early days the loggers stripped the white pine out of the hemlock and hardwood forests in the Lake States and left these "inferior" species behind. Nature closed the canopy and we have good valuable forests today. Had all these species been valuable we would have had more of the devastation that occurred in the pure pine stands.

In a National Forest in Montana I have seen scattered stands of magnificent larches left as "worthless" with a sturdy understory of mixed pine and larch. Twenty years hence this mature larch will doubtless make a valuable second cut; meanwhile it has served a good purpose in seeding and furnishing protection to the young stand.

Western hemlock will not necessarily be decadent in the second-growth forests of the future and white fir will not necessarily be a white elephant forever. Meanwhile if loggers leave these species there is still some forest cover - and "any tree is better than no tree." Is there not a positive danger in teaching the lumberman how to utilize every stick of timber?

Ideal silviculture of course demands that we take the less valuable along with the valuable; but the history of American logging shows also that it has been a godsend for loggers to leave the trees they couldn't use and that modern intensive utilization is sweeping over the forests like a plague of locusts. In the past the inferior species has been one of the strongest barriers to forest devastation.--S.

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Value of Treating Lodgepole Pine Posts

A report has just been received on the annual examination of two ranger station pasture fences on the Leadville National Forest. The fences were built in the fall of 1908 using fire-killed lodgepole pine posts which had been treated at the old treating plant located at Norris. At the Soda Creek station four posts out of ninety-nine set originally have decayed. These posts were set in wet ground. The average diameter of the posts at the surface of the ground is eight inches and apparently the posts which decayed were the smallest ones in the fence.

At the Dickey ranger station twenty posts out of a total of 534 set originally have decayed to date. These posts were in dry black loam soil and also slightly smaller than the average posts in the fence. Ranchmen in that vicinity state that five years is the average life of an untreated lodgepole pine post.--District 2.

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Service Bulletin

U.S. FOREST SERVICE

(Contents Confidential)

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TIMBER GROWING POSSIBILITIES ON THE OUACHITA

By W. B. Greeley

I doubt if the opportunities for forest management in Arkansas have been appreciated by the Service at large. The old Arkansas National Forest, now the Ouachita, seems commonly regarded as the prize stamping ground for chiggers, ticks, and woods burners, a notion that has blinded us perhaps to the wonderful timber farm which the Arkansas Forest officers have gradually been licking into shape.

Fire indeed has played a fearsome role in the Ouachita. Most any western coniferous forest, burned as often as that region, would long since have disappeared. But young shortleaf pine has a marvelous staying and sprouting capacity. Its knobby roots shoot up afresh after every burning. The oaks and hickories are equally resistant. And so the forest has outlived its abuse. Thinned down and defective as most of the stands are, representing probably half of the possible crop, they give a wonderful promise of the yields obtainable under real protection and forest culture. Areas that have been without fire for twelve or fifteen years make a forester's mouth water.

"Real protection" depends on rooting out the woods burning habits of a numerous local population. How District 7 and the Arkansas men are going about it has been fully described by Scott in recent numbers of the Service Bulletin. I for one am a strong believer in the success of their campaign. Its effects already are evident. And with fire once out of those Arkansas hills, let the most vaunted timber farms in Uncle Sam's whole domain look to their laurels.

They are the natural home of the shortleaf pine - an abundant seed bearer, a tree of rapid growth, and a producer of high quality, soft textured wood that has given "Arkansas Shortleaf" a distinctive place among the southern pines. As we pass beyond the time when fire was the dominant factor in the Arkansas woods, I look to see shortleaf pine extend itself much more widely and attain a growth rate of at least 300 board feet per acre per year.

White oak and hickory will be other staple products of the Ouachita. There is every sort of mixture from pure pine to pure oak. The defect in the present hardwood timber is the Forest's toughest silvicultural problem. Again we have to thank three or four generations of woods burning. A mighty job of forest sanitation must be put through to get sound hardwoods in the future. This has been tackled through a silvicultural improvement fund of $1.00 deposited for each thousand board feet cut under current sales. With this money the Service fells defective hardwoods, particularly old wolf trees that take up the ground.

Practically all the pine stumpage on the Ouachita is in keen demand. Nearly the entire Forest is susceptible of track logging. The largest land owner around and within the Forest has adopted permanent forest management. Others are likely to follow suit. There will be keen local interest and competition in practicing the forester's art. There will be opportunity for forest management as intensive as the woods facts collected will permit. There are chances to work out all sorts of useful silvicultural methods, the thinning of second growth pine so as to get the highest growth rate and lumber quality, the conversion of hardwood or mixed stands into pine, the mixtures of pine and oak that will produce the best timber of each, and so on. Nature is so generous in soil and rainfall and growing season that the response to any silvicultural practice that can be carried out will be more rapid than in most of our forest regions.

Concentration upon fire necessarily marked the pioneer stage in creating the Ouachita National Forest. We are beginning now to get beyond it. The next stage will be one of real timber farming. The local Forest officers will steadily master the fine points in timber culture. Silvicultural practices will become more intensive. And the Ouachita will become one of the most productive forest areas, in wood and money, to be found in the Union.

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CITATION

To Mr. Fred Morrell, District Forester,
and to the officers, Forest Rangers and
to the men of the Lolo Forest.

Gentlemen:

The citizens of Superior and vicinity wish to express to each and every one of you their sincere and deep appreciation of the whole hearted and effective work and assistance performed by you in combating the forest fire which threatened the town of Superior within the past few days.

Apparently Superior is now safe from immediate danger, but had it not been for the unremitting help and cooperation rendered by your department, and each and every member of it locally, and by those who volunteered and whose services were made use of, there might have been a different story to tell to-day.

We think you may be assured of even more hearty cooperation in the future on the part of this community than has been rendered your organiza- in the past in the work you are doing.

While this letter is signed by such citizens and business men locally as are immediately available, the sentiment expressed herein is shared by 100% of this community.

(23 signatures)

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ALASKA CEDAR MATURES SEED IN TWO YEARS

By Geo. B. Sudworth, Washington

A recent letter received from District Forester C. M. Granger (District 6) suggests the necessity of recalling an important bit of information published 13 years ago on the fruiting habits of Alaska Cedar. This information may be forgotten by present members of the North Pacific District, or it may never have been known to them.

Mr. Granger raises the question as to whether the Alaska Cedar (Chamaecyparis nootkatensis) matures its seed in one or two seasons. According to the oldest and the newest books on conifers it is said to be an annual fruiting species, but according to facts discovered some thirteen years ago by several members of the Forest Service, this cedar requires two full seasons' growth to mature its seeds. This fact was published by the writer in the "Review of Forest Investigations," (Vol. II, p. 7) a Service publication of two volumes, laid to rest in 1913 and now probably gone from the memory of the younger members of the Service. Be that as it may, the lack of knowledge as to the length of time required by the Alaska Cedar to mature its fruit apparently has caused District 6 members not a little trouble in obtaining ripe seed.

The writer feels considerable responsibility for the apparent absence now of this knowledge among members of District 6, because "Forest Trees of the Pacific Slope" (published in 1908), which is often used there as a reference book, says that the cones of Alaska Cedar mature in one season. It is not specially comforting now to know that in 1908 other writers also did not know the facts, nor is it any more comforting to learn that very recent writers on conifers are ignorant of the correct seeding habits of this cedar. It is really mortifying that the life-history of the Alaska Cedar, a species known to science now for more than

100 years, should still be so little understood. The lapse suggests how easy it is to accept without question supposedly well attested facts. The paradoxical truism, "Be sure you're right and then stop and find out what is the matter," needs to be applied in our study of the habits of forest trees. Occasionally things are found out about them that are not so.

Even now, when the cycle of seed development is known, the practical difficulty of finding Alaska Cedar trees with exactly mature fruit may not be lessened. A collector hunting for seeding trees may find individuals bearing a crop of cones of apparently full size, but which in point of age may be partly of one and partly of another season's growth. Except as a mere guess the inexperienced collector can not readily tell the age of these cones. With experience he will of course learn that it is only when the (still green) cones show more or less bulging along the borders of the cone-scales, (sometimes accompanied by a protrusion of yellowish brown seeds,) are they ready to gather. Cones a year younger, but of practically the same general size, will not show the fulness nor the brownish seeds present in cones a season older. Moreover, toward the end of the second year ripening cones will show more and more brownish areas on the scales which are unmistakable signs of maturity.

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TRAIL MARKERS

By Fred Morrell, D-1.

There isn't much but "Amen" that I can add to Ahl's article and Shepard's comment in regard to trail blazes in the June 7 SERVICE BULLETIN. Blazing of trees in the woods seems to be a nation-old custom. We cling to it like the Indian does to his tepee and his blanket. It seems that the American public dearly loves to deface trees with the ax. It is done along the trail, along the road, at camp grounds, - just anywhere in the woods where a man and a tree and an ax may be congregated. And usually the blazing is atrociously done. Few blazes are put on neatly. They are usually of varying size and shape without regularity of occurrence, and the great majority are "sloppy."

When it is our job to preserve forests, to make each tree do as much as it can in filling the need for woods products, why should we go about defacing thousands of them? Why should we mar the beauty of a trail through the woods by having it flanked by hundreds of marred trees? And how can we expect to get over to the public the idea that each tree is a thing of real value and beauty when we haven't got it over to ourselves? Surely we haven't got it over to ourselves or we would not go about on a program of wholesale mutilation.

Years ago, probably after a trip over in Ranger Ahl's or Ranger Reed's country, I made a recommendation that we substitute trail markers for trail blazes. I made no progress. Tradition and custom were too entrenched. Since the discussion is now started in the SERVICE BULLETIN I hope the subject will be thoroughly threshed out. I for one am ready to put the custom in the same class with light burning and the leaving of dirty camps in the woods.

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RANGER MEETINGS IN D-2

By L. H. Douglas

Ranger meetings are not a new thing in D-2; groups of Rangers have been meeting there for several years. They always came with the intention of getting up at 8 in the morning so as to be at the meeting at 9. But they had the habit of early rising and couldn't wait for 8 o'clock. Then they sat on hard chairs from 9 till 5 or 6 and smoked when they should have been talking or talked when they should have been smoking. Those were profitable meetings in spite of the fact that the men were physical wrecks for a time afterwards.

But the ranger field meetings this spring were different. The Rangers were buzzing out of town in cars and flivvers by 7 o'clock and all day long they fought a fire, (that wasn't burning) marked timber, made a grazing management plan, prepared a recreation plan, or performed the actual work in connection with other projects.

In the range management plan work, they made a type map and determined capacity. They planned proper distribution and stated how it would be accomplished. They decided upon proper seasonal use for different parts of the range. They discussed means of getting the requirements of the plan carried out.

The fifteen or twenty men worked in groups of five men each, and there was keen rivalry. It was fatal for an idea to show its head if it did not have good legs to stand on, because, good or bad, it was pounced on and made to prove its worth. In this connection, I might add that a management plan had been prepared in advance by the local Forest force for the particular range unit. After the Rangers had completed their plan and compared and discussed the two, the local plan did not always look the same, "if at all."

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GILDING THE DOMES

By F. V. Horton, Umatilla

It is not the forestry he learned in school that the fledgling forester is sometimes advised to forget. It is not the scientific part of the profession that he is adjured to discard upon entering the Forest Service; but in order to "fit in" it would be well for him to shed at once the four or more years of academic atmosphere.

The academic attitude, the intolerance and dogmatism of youth all conspire to make the fledgling forester a stepchild of the Service. He doesn't "fit in." He comes from the adolescent period of school life suddenly into a cold and somewhat busy world and into a profession which has reached its present status practically without the aid of his powerful intellect. He is dumped suddenly from the cozy warmth of the educational brooder into the chill air of experience, and is it any wonder that he is irritable? Is it any wonder that we hear his plaintive "cheep, cheep" at regular and somewhat monotonous intervals?

No, it is not the forestry he learned that he might better forget. Indeed he must learn more forestry - forestry as it is out in the dirt, not as it is in the book. He might better learn early in his official career that he is not a shining white crusader rescuing the holy sepulchre of scientific forestry from the barbarian practical man. He had perhaps better learn that his mission is in no way comparable to that of the social worker peddling tooth brushes to the hoi polloi.

Let the fledgling find his place in the forestry of to-day and cease to be irritated because he is not allowed to revamp immediately the whole movement as developed to date. Once his ability is proven he will find that his style will not be cramped whether it be "scientific" or "practical."

Let the fledgling remember that before we can gild the domes and minarets of our forestry edifice there is a heap of rough work to be done on the foundation.

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ANGELES FOREST HAS FREAK FIRES

After a splendid record of only five fires for the first six months of the year, the Angeles was suddenly visited by a number of freak fires, all on Ranger Peterson's district, during the Fourth of July week-end. A motorist on the Ridge Road, who had a bundle of laundry strapped to the running board next the emergency gasoline unit, suddenly discovered that it was on fire. One of the men jumped out and tore the laundry off the car, fell and rolled with it down a steep bank and landed up in a bunch of foxtail. The result was a 500-acre brush fire, which the three men in the car were sentenced to fight until it was out.

Next came the Kelley fire, also near the Ridge Road, which burned over 280 acres and was only kept out of the heavy brush by strenuous fighting. This fire is thought to have been started by incendiaries. About the time the Kelley fire was brought under control, an oil range in the hotel at Radium Hot Springs exploded and burned down the building with a loss of about $35,000. The fire spread to the brush but was controlled after burning over three acres.

The latest freak fire was caused by a truck loaded with cotton, which went off the Ridge Road grade near National Forest Inn with brakes in flames.

Spence Turner, Los Angeles County Forester, and his men gave the Angeles some fine cooperation in fighting these fires.

In spite of all this peck of trouble, Ranger Peterson was still smiling when last seen.--District 5.

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UTAH-NEVADA GRAZING MEETING

At the grazing meeting held last month at the Great Basin Experiment Station, many interesting subjects were discussed, some of which are given below.

Director C. L. Forsling showed results of years of scientific experiments with range plants under different methods of grazing. For example, more forage is made available to stock in the long run if 10 to 15 per cent. of the plants are left unutilized at the end of the season; wheat grass properly managed effectively kills out sagebrush; revegetation of depleted areas can be accomplished by continuing the grazing under proper management.

District Forester R. H. Rutledge stressed the need for more technical knowledge, since the Forest Service is becoming more and more an organization whose problems require scientific solution. Forest officers must acquire sufficient technical knowledge, either through schooling or self-education, to enable them to deal with their problems in a scientific manner. Mr. Rutledge also urged each Supervisor not to require too much reverence for his own methods of doing things from the new man in the organization. This is essential to keep the Forest Service progressive and to stimulate individual thinking and originality. Mr. Rutledge emphasized the need for careful application of the results of grazing experiments with particular reference to guarding against erosion, damage to reproduction, and against too low standard of utilization. It has been clearly demonstrated that forage left at the end of the grazing season is not only good insurance but enables plants to retain or regain their vitality and in the long run produces a greater tonnage of forage for the stock than when range is completely utilized.

Dr. J. Arthur Harris of the University of Minnesota, who is cooperating with the Forest Service in range studies, explained his work in physiology of plants. He explained that the osmotic concentration is higher in mistletoe than in the host plant and that this factor varies in plants natural to different climatic and soil conditions. He showed that wheat grass and sagebrush have the same osmotic concentration but that the wheat grass, on account of having a more superficial root system, is able to absorb the moisture first and thus has the advantage in competition with the sagebrush, which has a deeper root system.--District 4.

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PAYING BACK

One of the biggest land exchanges yet approved by the Secretary of Agriculture was sent to the Department of the Interior June 11. This exchange is with the George E. Breece Lumber Company of Albuquerque and covers the Las Trampas Grant in the Carson National Forest. By this transaction the United States will acquire 21,102 and a fraction acres of land carrying a stand of 56 million feet of timber, largely western yellow pine with some area of pinon and cedar. This land is to be paid for in stumpage to be cut from the Manzano National Forest. Several years ago Carson timber paid for two townships of timber on the Manzano in the Santa Barbara Tie & Pole Company exchange.--District 3.

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WASHINGTON NOTES

Fire Warnings: Under the fire-weather warning service, conducted by the Weather Bureau in cooperation with the Forest Service, effective fire warnings are being printed on the Daily Weather Map sheets sent out from Portland, Seattle, San Francisco, and Denver. Some of the ones so far used are: "Prevent Forest Fires - It Pays," "Help Protect Growing Trees - Prevent Forest Fires," and "Heed Fire-Weather Warnings of Meteorological Conditions That Make Forest Fires Easy to Start and Hard to Stop." These maps also include regular "Fire Weather Forecasts."

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The Year's Showings of Motion Pictures and Exhibits - 1925: During 1925 more than one million people saw Forest Service exhibits at fairs, and we show at comparatively few fairs. Approximately 500,000 more viewed our Class-2 exhibits prepared by the Districts in the West for county fairs and other local expositions. In the East, bromides, transparencies, and panels, sent from the Washington Office to schools, county fairs, Boy Scouts, and other organizations, were shown to more than 800,000 people.

On their regular schedules covering six-months periods, reports from the Districts show the number of people reached through the showing of motion pictures as follows:

District 1	46,993	District 5	27,900
" 2	191,868	" 6	3,875
" 3	14,465	" 7	31,377
" 4	17,693	Forest Products Laboratory	4,988
Totals	271,019		68,140
Grand Total	339,159		

Arrangements were made by the Washington Office for the distribution of nearly 800 films to cooperators including Extension men, wood-using industries, Boy Scouts, and State Foresters. Figures of attendance at all showings of Forest Service motion pictures total approximately 2,000,000.

We're expecting a bigger showing in 1926.

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THE LOOKOUT TOWER

When some thirty years ago the National Academy of Sciences made its historic report on the "National Forest Reserves" and the means of putting them under administration, it offered some interesting recommendations on personnel development: "Officers of the forest corps shall be taken from graduates of the United States Military Academy or from graduates of other scientific schools, or universities having scientific courses. Not less than four graduates of the United States Military Academy shall be sent abroad for instruction in forestry; and it shall be the duty of the Secretary of the Interior, on their return, to organize a school of forestry, in or near one of the great forest reserves, to which newly appointed officers of the forest corps shall be sent for instruction, and which may be open to civilians under such regulations as the Secretary of the Interior may prescribe: Provided, That one-half of the vacancies in the forest corps may be filled by the promotion, after satisfactory examination, of deserving men in the grade of ranger."

It is by no means outside the range of possibilities that the Government will some day establish Staff and Ranger Schools, at least in the West.

I am reminded that the great French national school of forestry at Nancy celebrated its 100th anniversary last summer. This school has had a profound influence in building up French forestry and a forestry profession of splendid traditions and accomplishment. What West Point is to the Army and Annapolis to the Navy, so is Nancy to the French Forest Service. Who knows but that some day our own Forest Service may have a school of equal renown and brilliancy?

Sir Peter Clutterbuck, Inspector-General of Forests in India, just retiring, has completed the plan for establishing an immense Imperial Forest Service Training College at Dehra Dun, India. As recounted in the Indian Forester, the scheme was launched six years ago when a commission of distinguished officials submitted to Parliament a plan for the training of forest officers for the whole British Empire. The standards of teaching at the new college will be equal to those at Oxford.

Perhaps we shall see a similar movement in this country. It is at least open to question whether the cause of forestry might not be better served in the long run by consolidating our comparatively small schools into two or three strong regional schools, well financed, well equipped, and strong enough to exert a commanding influence on the development of forestry and the forestry profession.--S.

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INCREASING PULP WOOD RESTRICTIONS

Gradually the export of pulp wood from Canada is being curtailed or, at least, surrounded by more stringent restrictions. In recent pulp wood cutting concessions granted in Northern Ontario to some four or five pulp and paper companies, it was stipulated by the Ontario Government in the agreements that all the wood should be turned into paper before being exported.

In previous contracts with pulp organizations in Ontario it was declared that, so far as Crown land wood was concerned, if converted into pulp, this was sufficient, but the Ontario authorities have now gone one step farther and called for the finished product in the shape of paper.

Now along comes the Province of Quebec, which has just passed a bill introduced by Hon. L. A. David for providing a fund for education from the natural resources of the province. The new measure provides for a tax of 10 cents per cord on pulp wood cut and manufactured in the province, and 15 cents per cord when cut but not manufactured within the limits of the province.

Nova Scotia, too, is stepping into line and getting ready to make a similar move. For years pulp wood in Novia Scotia, whether on private or Crown lands, has been exported. No objection has been raised to this policy for a long period but at the session of the Legislature just closed it was decided to impose an adequate tax to come into effect not later than May 1, 1927, on all pulp wood cut within the province, the same to be remitted in the case of wood manufactured within the province.

J. C. Douglas, Attorney-General for Nova Scotia, made this announcement and also pointed out that legislation had already been enacted permitting the Government to prohibit the export of pulp wood cut from Crown lands at any time it might see fit. The Attorney-General, referring to a resolution of F. J. D. Barnjum, said a $2 per cord tax on exported pulp wood from Crown lands could not be put on at once without seriously interfering with industrial life.--Wood Pulp News.

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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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AN ENDURING MONUMENT

By Herbert A. Smith, Washington

The death of ex-Secretary of War John W. Weeks removes a figure of outstanding prominence in national affairs during the greater part of two momentous decades. His service in Congress extended from 1905 to 1919, with 8 years in the lower House and 6 in the Senate; he stood second in number of votes received for the Republican Presidential nomination in 1916; he was a cabinet officer under two Presidents. Yet among foresters he will generally be remembered first of all, and perhaps longest, as the author of the Weeks Law.

"The country has had few more serviceable men," says one editorial writer. To the cause of conservation he rendered high service in connection with the enactment of two laws, each epochal in its field. Alike in the law which inaugurated Federal land acquisition for National Forests in the East and Federal cooperation with the States in fire protection and in the migratory bird law, a new use of Federal powers for the promotion of the national welfare was involved. In each case it was necessary to overcome a powerful and determined opposition from the standpatters, strict constructionists, and States-righters.

How protracted the fight was for Eastern forests, and against what obstacles, it is hard to realize now. It covered more than 10 years. Organized effort for action by Congress began in the Southern Appalachian region in 1899, and in New England in 1901. In 1902the Senate passed a bill authorizing the purchase of lands in the former region at a cost of $10,000,000, but the House took no action on it. Thereafter every Congress saw bills introduced, some of which passed one House or the other, and each year both the pressure for legislation and the opposition to it grew more determined. Early in 1909 a Senate bill appropriating $5,000,000 passed both Houses, but the lower House added amendments and a filibuster by Western anti-conservation Senators against sending the bill to conference killed the measure.

It looked like a deadlock. "Uncle Joe" Cannon, then Speaker of the House, the chairman of the Agricultural Committee, and other prominent organization leaders of both parties, the Western opponents of the National Forest policy, the anti-Roosevelt wing of the Republican party generally, and many Democrats opposed to enlargement of Federal activities, presented an aggregate of resistance which seemed able permanently to block the path. It was chiefly on the ground of unconstitutionality of the proposed measures that the opposing forces reared their defenses. But in 1907 Congressman Weeks had been given a place on the Agricultural Committee.

Though from Massachusetts he had been brought up on a farm in northern New Hampshire, near Lancaster, where for years he spent his summers and where he died last month. Early associations and personal familiarity with the White Mountain region probably had a part in making him one of the strongest friends of the purchase policy in the House. On July 23, 1909, he introduced a bill "to enable any State to cooperate with any other State or States or with the United States, for the protection of the watersheds of navigable streams, and to appoint a commission for the acquisition of lands for the purpose of conserving the navigability of navigable rivers."

The bill differed in many ways from those previously brought forward. It was skillfully drafted with a view to disorganizing the opposition and winning as wide support as possible. To make a long story short, it broke the jam. At the time it was feared that the elaborate procedure set up by the act and the restrictions it imposed would so hamper the work of acquisition as largely to defeat its purpose, but these fears have been proved unfounded. On June 24, 1910, the bill passed the House by a vote of 130 to 111. On February 15, 1911, it passed the Senate by a vote of 57 to 9. It became law on March 1.

Under the Weeks Law the States and the Federal Government together have made enormous progress towards solution of the country's forest problem. Those who wished to enfeeble the movement for forest conservation sought to hold in check Federal action by insisting that the States should take care of the matter. Looking back, it is easy to see how wise and farsighted was the statesmanship that opened the way for Federal leadership while leaving ample scope for the States to do their part. The Weeks Law has been followed and in a sense superseded by the Clarke-McNary Law but its influence and its fruits endure, to the lasting benefit of the American people and the individual States.

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President Garfield's father died fighting a forest fire.

THE FIRE SITUATION

The fire-fund figures for Districts 1, 5, and 6 for the last ten days of July showed that District 1 spent $250,000 during the period, District 5 $35,800, and District 6 $68,188. The total expenditures in all the Districts since July 1 were $736,199, of which District 1 spent $425,000, District 5 $138,000, and District 6 $163,488. The expenditures in the other Districts were comparatively small. The seriousness of the situation this year is indicated by a comparison with the total figures for July, 1925, $201,014, and 1924, $371,471.

Statistics received from District 1 to July 31 show that 94,460 acres of National Forest land and 18,700 acres of other lands were burned over since July 20. The largest losses on National Forests during this period occurred on the Flathead with 32,000 acres, the Kaniksu with 30,000, the Blackfeet with 15,250, and the Pend Oreille with 11,500. For the season the Kaniksu led the list with 50,200 acres, and the strain on the fire fighters was intensified by the large number of separate fires, 230 in all, 55 of which were Class C. In the first week of August high winds approaching gales in some sections caused a large spread of the fires on the Pend Oreille, Blackfeet, Flathead, and Kaniksu, and other Forests also lost ground. On the Flathead 40,000 acres were burned over within a week. The latest report from this District, dated August 11, says that although more favorable weather conditions in some sections during the last two days had made possible some progress toward controlling fires considerable spread had been caused by winds on the Pend Oreille, on some Kaniksu fires, and on the Collins Creek fire on the Clearwater. Fire fighters were being secured at Seattle and east to Billings for replacements and to strengthen the forces on the larger fires.

The summary statement received from District 6 shows that to July 31 the area burned over was 99,704 acres, of which 69,699 acres were National Forest lands. Fires during the last ten days of July numbered 184, of which 77 were caused by lightning. This District's report for the first ten days of August shows that lightning played a smaller part than for some time past, 140 of the 183 fires in the period being attributed to human agencies, 50 of them smokers' fires. During the period 29 Class C fires started; 45 of these fires were reported as burning inside the boundaries of 17 Forests on the District, 9 in Oregon and 8 in Washington. One thousand fire fighters were still employed. While weather conditions were somewhat more favorable continued high temperatures and low humidity made the situation very acute. Dense smoke had eliminated the lookout service and the Supervisors were being urged to put on more emergency guards and patrols.

A report from District 5 dated August 12 said six fires were burning in the District, with areas ranging from 500 to 5,000 acres, but that they hoped to have them under control in a day or two. Fire conditions were bad in northern California but more favorable in the south.

By the end of last week fifteen men had been sent to District 1 by Districts 2 and 4. Colonel Greeley cut short his visit to District 6, and upon his arrival in District 1 wired Districts 2 and 4 to send ten additional men each.

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WHAT WILL WE DO FOR PENCILS?

By R. K. Helphenstine, Jr., Washington

Pencil manufacturers all over the world have for years been dependent upon our native eastern red cedar (Juniperus virginiana) for their supplies of raw material. A recent consular report from Paris, France, states, however, that prices of first quality American pencil cedar are rapidly becoming prohibitive, and that if conditions do not soon improve a substitute wood will have to be found. The wood of the Pacific Coast sequoias has been tried, but apparently with little success. In France pencils are to a certain extent already being made from basswood and alder, which after being dried is specially treated. It is reported that although the quality of such pencils cannot compare with pencils made from even second grade American cedar, a fairly satisfactory pencil is produced at a large saving in cost. Basswood and alder can be obtained in France at approximately $12 per ton, and after treatment would cost about $16. The finished pencil is sold for 10 or 12 francs per gross. American cedar, on the other hand, now costs $115 or more a ton, and the finished pencils bring 48, 50 and 60 francs per gross, according to quality.

Although there are no official figures available on the subject, it is estimated that the annual consumption in France alone of American pencil cedar is about 1,000 tons, which is shipped in the form of both logs and slats.

In connection with ffuture supplies of pencil material it is reported that England is making considerable progress in developing the cedar forests on the slopes of Killimanjaro in Kenya Colony, Africa. Sawmills have been built, and although much is yet to be accomplished before quantity production starts, considerable shipments of Kenya cedar have already been made. Pencils of this wood are now being successfully marketed in France. The price of Kenya cedar (Juniperus procera) is half the cost of American cedar and apparently there is but little difference in the finished pencils, which sell at about half the cost of those made of raw material imported from the United States.

One large French pencil manufacturer predicts that in ten years England will not only have ceased buying cedar from the United States but will become the main source of supply for pencil wood for all Europe.

The supply of a number of our specialty woods such as red cedar, dogwood, and persimmon seems to be growing mighty low. Can we compete with British East Africa in growing pencil cedar, or when our original supply is gone must we turn to the "eversharp" variety or buy them of England? Can we be satisfied with incense cedar pencils, or with some other native substitute?

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IRON TREATMENT FOR POISON IVY

Ivy poisoning has at last yielded wholly to medical treatment, we are assured by Dr. Frank Thone in an illustrated article produced for newspapers by Science Service (Washington, D. C.)

"Dr. James B. McNair, a scientist at the University of Chicago, has put in a number of years investigating poison ivy and its relatives, poison oak and poison sumac, and he has both isolated the substance responsible for the blistering action of these shrubs and proposed adequate remedies and preventive treatments.

"He tried mixing it with various solutions to find what would combine with it to form a neutral, non-poisonous substance. The best and most effective proved to be salts of iron, particularly ferric chloride.

"Dr. McNair therefore suggests as a means of preventing ivy poisoning the use of a 5 per cent solution of ferric chloride in a half and half mixture of alcohol and water, or glycerin and water. If the hands and face are bathed freely in this solution either before or immediately after one goes into a region known or suspected to contain poison ivy or its kindred plants, no ill effects can follow.

"Dr. Fuller has developed a modification of his own, using a strong solution of ferrous sulphate in water instead of the ferric chloride in water-alcohol. There seems to be no definite strength of solution - anything short of saturation will do. Dr. Fuller states that the sulphate solution is cheaper to make than the chloride and that it keeps better.

"A third and very effective treatment is advocated by J. F. Couch, chemist of the U. S. Department of Agriculture. He paints ivy-poisoned patches of skin with a solution of potassium permanganate, and he states that this always gives immediate relief and prevents the spread of the trouble. His treatment has the slight disadvantage of turning the skin brown, but this effect is instantly removed by washing with a weak solution of oxalic acid."--Literary Digest.

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MISCHIEF

Our Sesqui-Centennial Exhibit has been violently assaulted and we suspect that lumber or cattle barons are back of the criminal. The following dispatch has been received from George H. Cook at Philadelphia:

"A small dog has been hanging about the Transportation Building for several days. He is probably a stray but is a friendly perp and has been petted by watchmen and others. This morning, so the report was given to me, he discovered the blue jays in the Forestry exhibit and immediately took after the one on the ground. A Marine policeman saw him and pursued. The bird was damaged but not destroyed. One wing is broken and the feathers ruffed. I have restored the bird's appearance to a degree and will work on it some more tomorrow. The Assistant Chief of the Building put a string on the dog and I hope disposed of him. I have not seen him since noon."

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WHAT A SHEEP HERDER THINKS ABOUT

By L. A. Brisbin, D-3

"Por Dios! Daylight already? It can't possibly be, I just went to bed. Now what's the trouble? That darn dog must be running through the band. I have to get these frijoles on to cook, wish I had done it last night. I am sick of cold tortillas, think I'll make up a new batch at noon. I never saw such wood, couldn't make it burn with a blow torch. Those sheep will be to the top of the divide before I can get this coffee made. Heavenly days! No water in camp. Well, I have to have it so I may as well get it right now. I know that this is the worst tortilla that anyone ever had to eat and the coffee isn't to be bragged on much. Well, come on pup, let's get a move on. Wait a minute, I'll have to get my slicker. I know that it will rain or snow, it always does. The Ranger told me to put out my fire. That's all right down in the timber, but above timber line it looks kind of silly to me. I'll put it out though, for if I didn't he would be sure and come and find it and give me a going over. Well, I'll swear! I don't see how sheep could go so far up a hill in half an hour. The Ranger told me that I ought to have camped on that ridge. Wish I had now. Wonder where that old fool ewe is going with that bunch? This job is going to drive me crazy. Well, Pup we will have to go and get her and bring her back. Some climb, but we got around her at last. That old ewe always did make me mad just to look at her. Now where does that old black goat think he is going with that bunch? I would like to know what he thinks there is on top of Wheeler's Peak anyway. Suppose I shall have to go and get him back. It's time for them to rest up and I have to make them tortillas for dinner. That old dutch oven is about broken in two. Wish I had a new one. I knew that it would rain and trying to build a fire now sure will drive me crazy. Forest Service says to move camp every three days or oftener. All right for the range, but tough on the herders. Where are those burros? I heard old Jack's bell just a while ago. I'll bet he is headed for the timber. Don't blame him much, for rain above timber line is no joke. Well look who is here! How do you like it, Ranger? Was just going to move camp. You'll get my burros? Fine, I'll pack up while you run them in. You'll show me how to throw a good hitch? Now that is slick. Quick too isn't it? Come on burros, let's get a move on us. Adios, Ranger, see you next week. Yes, the sheep are looking good, but it's a tough job. No use for you to twist around Jack, you are going to keep that pack on until night. I believe that I'll camp on that ridge over there. Wonder why it's always up hill in the mountains? Here we are and it's nearly dark too. Sure glad that I brought that wood and water with me. Pretty good I am, that Ranger didn't get to tell me to move camp this time. He isn't much better off than I am tho, always out here alone. Wonder where he will camp tonight. I hear some coyotes, pup, suppose we will have to sit up half the night and keep them off. Sure tired, I hope the boss brings some salt for these sheep tomorrow. I am about out. Rocks under the bed, but it feels good anyway. Pretty soft after all pup, nothing to do until tomorrow!"

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YOU WIN

Recently Smith has been an unwelcome visitor around the different offices selling membership in the local Fish and Game Association. He called upon Bill Nagel at his office, and (Bill being out) left the following note:

Dear Bill: Called on you today to sell you a membership in the local Fish and Game Association. You not being present to defend yourself, I am leaving you a membership card for which you owe me $1.00. Smith.

A few days later the following note was received from Bill:

Dear Glen: Regarding membership in Fish and Game Association, came over today to match you to see if I would pay you two bucks or nothing. You being absent, I had to match for both of us, and regret to say that you lost. Nagel.--District 1.

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ARIZONA WOOL GROWERS' MEET

At the fortieth annual convention of the Arizona Wool Growers' Association held at Flagstaff July 13 and 14 resolutions were passed on the following topics of general interest:

They approved the National Forest section of the revised Stanfield Grazing Bill, indicating, however, that its provisions do not in some instances go as far as the sheep men desire. The association is opposed to the public domain section of the revised Stanfield Bill and resolved that should this section of the Bill become law, they will ask that Arizona be exempt as Wyoming has done. The association went on record as endorsing the continued cooperation with the Biological Survey on the predatory animal control work. It recommended a change in the appropriation for control of sheep diseases pointing out that the present appropriation is confined to the control of rabies, and their desire is to have an appropriation that can be used for the control of any and all sheep diseases. The meeting recommended a Federal Pure Fabric Law including Federal inspection, etc. It recommended a continuation of the present tariff law as it affects the Wool Growers' products. It recommended a continuation of the cooperation of the Arizona Agricultural College with the Bureau of Animal Industry and the Bureau of Agricultural Economics in the Department of Agriculture, to continue the ranch surveys and the furnishing of advice on markets, feed, orderly marketing, etc.--District 3.

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GUARD TRAINING

One combined guard meeting is becoming a common practice in the California District. Three of the southern Forests held such meetings this year. The Angeles held a two-day session at Ross Field, attended by all the rangers, guards and lookouts. The Sierra continued its annual get-together of guards as heretofore. The Plumas and Lassen held three-day sessions. A new stunt was tried on both the Lassen and Plumas which proved very much worth while. An actual fire was started on both these Forests. On the Lassen one man was assigned to the job of controlling the fire while the rest of the crew acted as official observers. On the Plumas, Supervisor Benedict of the Sierra, who was visiting there, and Ranger Kloppenburg started a fire which was supposed to have been confined to a quarter acre but which spread to 1-9/10 acres before it was put under control by the crew assigned to do this work. These fires offered an opportunity to drive home in a most striking manner the important points brought out in lectures and discussions. It was amazing to find that the errors, both of omission and commission, which have been noted and reported by boards of fire review for the last decade, stuck out like sore thumbs in both these experiments.

A little daring, reasonably favorable weather conditions, and ground to practice on will make such experiments for guard training a regular event, and as one guard said at the conclusion of a hard, gruelling day, "By gosh, a fellow sure can learn something at a fire!"--District 5.

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PINE SEED SOWER

About 23,000 square feet of Norway pine seed beds were sowed at the Beal Nursery on the Michigan Forest this spring by the use of a new seed sower. The sower was made from an old grain drill and represented considerable work and ingenuity on the part of planting assistants Turner and Johnson. The drill will sow any kind of seed no finer than jack pine, and by using various combinations of sprockets any desired rate of sowing can be done. The machine runs on the four-inch side walls of the seed beds, but undoubtedly it could be perfected so that the wheels could run on the ground the same as an ordinary grain drill.

The machine is rather crude in its present form, but it will gradually be perfected to a point where it can be recommended to other nurseries. It performed a very satisfactory operation on the recent spring sowing. The saving of time is not as big a factor as the proper distribution of the seed, which is difficult to secure in hand sowing.--District 2.

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MOUNTAINEERING CLUBS

By John D. Guthrie, D-6

According to the last edition (May, 1926) of the "Bulletin of the Associated Mountaineering Clubs of North America," the North Pacific District may claim first place as to number of such clubs within its area.

By a liberal assignment to Districts, the list is about as follows: Districts 1 and 4 have one each; District 2 has four; Districts 5 and 7, seven each; while District 6 can claim eleven such clubs. There are: Cascadians of Yakima; Cooperative-Campers, Seattle; Klahhane of Port Angeles; Mazamas of Portland; Mountaineers of Seattle and Tacoma; Mount Baker Club of Bellingham; Olympians of Hoquiam; Sagebrush and Pine Club of Yakima; Spokane Mountaineer Club; Trail Club of Spokane; and Trails Club of Portland.

Though not allied with the Associated Mountaineering Clubs, there are in D-6 also the Angoras of Astoria, Oregon, and the Craters of Medford, Oregon. We have found these clubs to be good cooperators.

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THE LOOKOUT TOWER

Here is an enthralling book - one I wish could be in every ranger station - Ernest Thompson Seton's "Lives of Game Animals." Volume I deals with the Jaguar, the Mountain Lion, and other cats, and the Wolves and Foxes.

The book is "scientific" but in addition it is most human and fascinating. A full hundred pages are devoted to the Cougar, for instance, to his domestic habits, his technique as a hunter, his patience, playfulness, courage, and beauty, his relations to man; in fact everything that is known about him, fortified by the testimony of hunters, naturalists, and plain observers for a century past.

I am glad that so wise a man as Seton raises his voice against the entire extermination of the Cougar, which he rightly regards as one of the most magnificent and beautiful of beasts. Seton berates the Government for its systematic campaign of extermination and the hunters who, absolutely unarmed except for a pack of hounds, a high-power automatic rifle, a six-shooter, and a sheath knife, drive this "cowardly" animal into a tree and slay it.

It is interesting that the range of the Cougar north of Mexico now coincides pretty well with the National Forest boundaries of the West. The Forest Service may ultimately have the say whether or not the campaign of extermination against the Cougar is to go on to a finish. Possibly he will be allowed to take his last stand in rugged country where he can do a minimum of destruction to live stock and will even be allotted a small part of the deer supply, to which rights of usage and consummate skill as a hunter seem to entitle him.

Forest Rangers probably have more authentic opinion and fact about the Mountain Lion than exists elsewhere in the world. It is a pity to lose it. The BULLETIN will welcome authentic observations on the Lion as well as our other wild friends.

Seton's book is large, sumptuous, full of the author's splendid sketches and photographs - and consequently and unfortunately expensive - $25 per volume. Vol. I is in the Department Library and is probably available in first-class public libraries.

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Service Bulletin

U.S. FOREST SERVICE

(Contents Confidential)

Vol. X, No. 33. Washington, D. C. August 23, 1926.

FIGURES AGAIN

By R. D. Forbes, Southern Forest Experiment Station

Although the particular cost records of which Mr. Roberts speaks in the July 26 issue of the SERVICE BULLETIN have no direct interest for the odd fish (there's no accounting for tastes!) who likes research, his remarks strike a very responsive chord among investigative men. Incidentally, his plea for account-keeping is a fine example of the scientific spirit - the desire for facts - which the Forester asks of us all, whether on a ranger district, at an experiment station, in a supervisor's office, or even in that sanctum sanctorum - the Atlantic Building.

When Shoemaker earlier gave up the attempt to measure efficiency by cost records, he was discouraged by exactly the same sort of difficulties that baffle the experiment stations. It is our job to measure things, and then figure out what the measurements really mean. To know what measurements to compare is the test of any research man, for we all know that figures can be made to prove almost anything. Roberts, in our opinion, is absolutely right in pointing out that the only valid comparisons are between sets of information in which all the conditions except the one being studied are alike. Arranging one's data so as to eliminate all but one source of difference, or, as is much more often the only feasible plan, making due allowances for other sources of difference, is a process by no means easy. Where the variety of conditions is very wide, and their relationships are very hard to "unscramble," one must content himself with rather generalized conclusions, in silvical investigations as in cost accounting. But even generalized conclusions based on real measurements are worth all of the hunches, guesses, and time-honored traditions in existence.

Perhaps an illustration will help. I still remember the vast disgust with which, some years ago, I crawled around over a fresh burn on the Tonto Forest, and answered for the first time all the seemingly useless questions asked by the standard fire report form. Even a background of scientific training did not reveal to me what possible good it would do to gather that "bunch of junk," as I heatedly thought of it, and bury it under a shroud of dust in the Supervisor's or District office. But when Show and Kotok's bulletin on "Forest Fires in California, 1911-20" came along, three years ago, accompanied by a printed request from the Big Boss that every Service man read it, I began to get the idea. What Show and Kotok did was to dig up the remains of some 10,000 fires from under the aforementioned shroud of dust, and by a careful grouping, adding up, and averaging of many, many figures, to give the District the most powerful weapon it has ever had for combating forest fires. That weapon was Knowledge - knowledge of where fires occurred, when they occurred, and why they occurred. It was forged of Measurements, and was given its keen cutting edge by Scientific Thought.

There is not a job in the Forest Service that could not be improved by a study of figures. Incidentally doesn't it all go to prove that without calling names one way or the other, administration and research are, like "The Colonel's lady and Judy O'Grady, ---- sisters under the skin?"

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MARKING

Discussing the subject of marking and other management matters on the Ouachita at the close of his trip, the Forester has said:

"I also believe it important to further develop the marking ability of the entire organization by more instructional marking by groups of Forest officers, under the direction of the Supervisor or his timber sale officer. I should like to have considered the setting up of a standard that every officer in the National Forests who has to do with marking shall participate in this instructional group work at least once every year. The instructional marking should include a careful check of cut-over areas or of marked areas followed by a fresh marking in which the points and principles discussed can be applied. It is also important to carry out more completely a recheck of marked areas by the District Ranger or a competent sales officer before the job is called complete. This can often best be done by two or three men marking together with the most experienced one acting as the leader and checking the work of the others from time to time.

"A good deal of investigative work on thinnings needs to be done. The Southern Forest Experiment Station doubtless can and should aid materially in developing plans for such investigative projects, as the various degrees of thinnings to be tested, etc.; but I feel that it would be very desirable to have the local Forest officers, under the leadership of the Supervisor and his staff, do most of the work themselves and go right ahead with their own experiments and demonstrations.

"In connection with group instruction in marking, it would be highly desirable to give particular attention to thinnings and to mark stands for thinning with particular care and close checking to serve as demonstration areas. A demonstration of good thinning practice, say one or two in each ranger district, at points which the Forest officers and incoming men can easily visit and study will be very helpful in developing forest management capacity in the whole organization.

"The Ouachita should become one of the most productive and intensively handled National Forests in the United States. With its growing capacity, its valuable species, and its relative accessibility, it presents a wonderful opportunity for the rapid development of real forestry. I would like to emphasize the idea that, while the experiment stations and other agencies will of course help, this promising development must and should come about largely through the working out, testing, and mastery of its technical requirements by the local Forest officers. They are living in these woods with an opportunity to study and observe what is taking place in the woods every day. The better forests that can be brought about will be their forests and better crops of timber that can be grown will be their products - no one else's. They have a wonderful opportunity to carry through an outstanding development in American forestry, but this will require a great deal of the spirit of real inquiry and of testing things out.

"Another desirable line of study would be to determine growth rates on cut-over lands. As more of the National Forest is cut-over and its stands assume more of a second-growth character, it will be necessary to revise completely the growth calculations used in management plan revision. Here again, as in the case of thinnings, the sooner we begin to find out what we can count upon our forest areas to do, the more rapidly will we develop the understanding of the basic technical facts by which future management plans and silvicultural practices will be governed."

We greatly value the Forester's comments and feel that we have been particularly fortunate in having them. These are some of the high lights in forest management work that we have been striving for, and it is always easier to prize agreeable comments, especially when they are in line with what we have been striving for.--District 7.

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CANINE HONORS

Again a dog is accorded honors when, Tuesday, July 27, his barking saved the buildings at the Forest Service Experiment Station, near Quincy, from burning when in some way they caught from a fire in the kitchen stove. Tom Gray, keeper of the station, built a fire to cook his supper and went at once to the barn. The kitchen caught on fire and made a great smoke, whereupon Tom's dog set up a howl which he continued until he attracted the attention of Tom and his buddie, I. Christensen. The men extinguished the fire before it burst through the roof.--District 5.

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THE FIRE SITUATION

Information received from the field giving the estimated amounts paid from the fire fund indicates that during the first ten days of August the total expenditures were $468,292, bringing the amount since July 1 to $1,204,491. Of this total amount the expenditures in Districts 1, 6, and 5 were $700,000, $261,658, and $227,000 respectively.

During the period reported on 120 new fires started in District 1, of which 20 were Class C; the number of Class C fires burning on August 13 was 66. The area of National Forest land burned over during the period was 140,000 acres and on other lands 15,000 acres, and for the entire season 320,000 acres of National Forest land and 50,000 other lands. The Kaniksu Forest heads the list with about 100,000 acres. Other Forests which have lost heavily in acreage burned are the Blackfeet with 60,000 acres, the Flathead with 54,000, and the Pend Oreille with 40,000. On August 10, 3,700 fire fighters were under employment in the District. Most encouraging news was received from this District on August 18. The fire conditions were reported greatly improved throughout the District due to cloudy weather and some precipitation, and more unsettled weather was predicted. Men were being released at some points but unless heavy rainfall should occur much line required construction by the present forces. The peak of the season, however, was regarded as apparently having passed.

Since the latest report from District 6, noted in last week's BULLETIN, was received the situation has undoubtedly been greatly helped by showers which the weather map shows have occurred in the North Pacific States.

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COLOR AS AN INDICATION OF INFESTATION IN YELLOW PINE FORESTS

By W. D. Edmonston, Consulting Entomologist, D-4

A forest entomologist in viewing a body of yellow pine for the first time depends to a great extent upon his knowledge of color. Any change in the color of the foliage from normal green at once attracts his attention. Color is one of the most useful attributes in the location of infested trees. In a preliminary insect survey of extensive areas it is chiefly depended upon to supply the necessary data on which plans for intensive surveys are based. In a mountainous country where from points of vantage distant timbered areas can be viewed and discolored trees readily noted, it is possible, by noting the various colors of the foliage, to arrive at conclusions as to an increase or decrease of an infestation as well as an estimate of the yearly loss.

Yellow pine which is attacked by Dendroctonus ponderosae in August rarely if ever shows any change in the color of the foliage until the following year. During the past season on the Kaibab National Forest, Arizona, a large series of infested yellow pine trees were closely observed and changes in the color of the foliage were recorded as they occurred.

Twenty infested trees with an average diameter of 25 inches in eight group infestations located at varying distances on a mile strip were constantly under observation. Every three or four days the color of the foliage was noted and compared with that of the trees in the group. The trees were attacked during August 1924 and the records covered the period from May 1 to September 19, 1925. The foliage of all infested trees remained green up to May 10. On the 11th only a few had faded. This fading was more marked after a tree had been felled, when it was found that there was a departure from the normal green color and that the leaves were a grayish green and dry. On the 18th a slight yellowing of a few trees was recorded. On the 22nd nearly all trees had faded and from the 24th to 27th they had a decided yellowish tinge. On June 15 all the trees were a decided yellow, on the 22nd a few were slightly sorrel. From July 16 to 23rd all were decidedly sorrel in color and on the 30th a few were beginning to turn reddish. The line of demarcation between yellow and sorrel is difficult to assign to a specific date. However, a noticeable change from yellow to sorrel was recorded after the end of June and all the trees could be classed as sorrel after the end of July. From August 12th to 20th most of the sorrel colored trees were decidedly reddish and from then on until the middle of September all the trees could be classed as Red Tops.

There are always a few trees which hold their green color well into July. After the first rains in July these trees change color very rapidly - sometimes within a few days. It is evident on reviewing the notes that on June 15 a marked change has taken place in 95% of the infested trees, the predominating color being yellow, but not a deep yellow. This sorrel or deep yellow comes a month later at which time a slight reddish tinge can be observed. This is the beginning of the Red Top stage which predominates at the end of August.

It would appear that the period June 15th to July 31st is the logical time for field examinations if color of the foliage is to be considered as the basis upon which the location and amount of infestation is judged.

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"DEAD HORSES"

By L. T. Mahurin, Washington

"Dead Horses" seems an uninteresting subject, yet in the language of the story-teller "thereby hangs a tale."

Those who review various and sundry claims from Forest officers covering losses of horses, livestock, and equipment of all kinds have come to designate or refer to all such claims as "Dead Horse" claims. Just why a claim for a wrecked flivver, a lost saddle, or damaged wagon should be called a "Dead Horse" claim, along with the really and truly dead horse, may seem strange. Legend now has it that this came about because it was recognized that all these claims have one point in common with the horse - they all have a tale attached to them.

The tales concerning these various accidents and losses are varied, interesting, and viewed with sympathy. There is the too frequent case of Old Dobbin who has seen fit to stick his head through a conveniently left-open barn window and obtain a first-class feed of poisoned oats that were supplied the Ranger by the Biological Survey for extermination of rodents. Or Dobbin may choose to use his intelligence to flip open with his nose an insecurely fastened door and thus reach the wherewith to commit suicide. Then there is the case, which has also been repeated, of losses of cattle which died as a result of eating T.N.T. or dynamite that had been cached along a Forest Service road project or left accessible to livestock.

In many of these "Dead Horse" cases, after the accidents have occurred the means by which they could have been prevented are so obvious as to make it difficult to sustain them as claims being free from negligence.

Aside from the loss of livestock, this tale has point in that these claims are costing the Government over $4,000 annually. It is believed that with the above information any Forest officer can write the proper moral at the end hereof.

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TRY HONEY AND ALMOND CREAM

Forest Ranger W. J. Pinson has sprung a new one on this office, states the New Mexico Game and Fish Bulletin. He submits a recommendation that a portion of the Santa Fe River be closed to fishing, and backs up his plea with the reason that the undersized fish have been hauled out of the water so often that they are getting all sunburned! The Commission will decide as to the closure, but we hasten to advise W. J. that this Department draws the line at honoring requisitions for cold cream to restore the pristine complexions of the trout.--District 3.

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ANOTHER MUNICIPALITY PRACTICING SILVICULTURE

By Thornton T. Munger, Pacific Northwest For. Exp. Sta.

With Dean Winkenwerder of the University of Washington Forest School as consultant, and Allen Thompson as resident forester, the City of Seattle is beginning to do things silviculturally on the watershed of Cedar River which is the source of its municipal water supply and part of its hydroelectric supply.

In this watershed of 90,000 acres the city owns about 40,000 acres, and the rest is divided among the Northern Pacific Railroad Company, Weyerhaeuser Timber Company, the State of Washington, and the Snoqualmie National Forest. Thirty-seven thousand acres have already been cut over and a logging company on a long-time contract with the city is to cut 40,000,000 feet annually. Until this year nothing has been done to secure the reforestation of the logged lands, other than the fire preventive measures required by law. Severe fires in both 1922 and 1923 ran over a great area on which the slash had already been burned a time or two, leaving a large area very much devastated. Some of the very oldest cut-overs escaped these later fires and have a pretty fair growth of saplings.

Dean Winkenwerder was called in by the city last year. He asked for $30,000 for the first year's forestry work and told them how he was going to spend it, got the money and the first work is now under way.

This is what they are doing:

1. Falling the snags on the older cut-overs. It is costing about 20 cents per snag where the average tree is about 24 inches in diameter.

2. Building trails and telephone lines into the less accessible parts of the watershed, to better the existing cooperative protection.

3. Building some narrow fire lines along strategic routes in the logged-off country.

4. Establishing a nursery of 750,000 output in order to plant 1,000 acres a year of the devastated land where there is little hope of prompt or satisfactory natural reseeding.

5. Classifying the logged-off land to decide what will reforest of its own accord and what needs artificial help.

6. Tightening up on the supervision of the logging operation to see that the company cuts snags currently, burns its slashings promptly and takes every known precaution against fires.

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GAME ESTIMATES

According to the 1925 estimates there are about 59,000 head of deer in the fourteen National Forests of Oregon, and over 22,500 in the eight National Forests of Washington; a total of approximately 81500 for the two States.

Elk rank second with over 12,000 head, 8,500 being credited to the National Forests of Washington and 3,500 to the National Forests of Oregon. Next come black bear, with 5,600 for Oregon and 5,700 for Washington, or a total of 11,300 for the National Forests of the two States. The report shows 2,000 mountain goats in Washington, but none in Oregon. Some 80 mountain sheep are listed about equally divided between the two States. About 30 antelope are given for Oregon; while 50 caribou and 15 grizzly bear are reported on the National Forests of Washington. These figures relate only to the National Forest areas of some 25 million acres in the two States.

The summarized estimates for all the National Forests of the United States show: deer, 605,900; elk, 72,000; antelope, 7,500; black or brown bear, 46,200; grizzly bear, 5,600; caribou, 140; moose, 6,000; mountain goats, 17,000; mountain sheep, 12,000.--District 6.

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HUMIDITY AND FOREST FIRES IN SOUTHEASTERN ALASKA

By M. L. Merritt, D-8

With an average annual rainfall of 80 inches at Juneau, Alaska, and with June, the driest month of the year, showering 3.85 inches on the just and unjust alike, one would naturally look for umbrellas, rubber boots, and wet feet rather than for low humidity and forest fires. But June of 1926 was "unusual" and we had both. The fires covered 500 and 200 acres respectively and they burned fast and produced lots of smoke.

The spring had been exceptionally early and warm. Heavy rains had fallen during three of the first five days of June, followed by dry and clear or nearly clear weather from the 5th to the 25th. For all of this period an east or "near east" wind blew from the high dry interior to sea level at Juneau. Just as it does in District 6 this dried out surface vegetation and at noon of the 15th humidity was down to 33. The next day it was about the same and that afternoon (the 16th) a fire started. The following day humidity dropped to 29 at 8 a. m., 26 at noon and 29 at 8 p.m., and the fire spread itself over about 500 acres. That night it was controlled and held thereafter. Humidity on the 18th, however, was 27, 26, and 29 at 9 a. m., noon and 2 p. m., and that afternoon (the 18th), another fire started about 7 miles from the first. This burned about 200 acres in 3 or 4 hours. Prompt action suppressed it the same night.

The rate of burning was, however, extremely rapid and the smoke and air gave all the old-timers just the same uneasy feeling they used to have in the States, a feeling usually lulled to rest by the Alaska drizzle. It seemed entirely out of place to walk through a burned-over area, see trees and saplings all crown-fired and killed, and yet get your feet wet in the wet spots below the burned-over surface. I burned a big hole in one of my socks that night trying to dry them out. These same wet spots, however, helped tremendously in extinguishing the fire which couldn't very well be trenched in the standard way. So we had to use our wits, fingers, and lots of water and chopping to put out the fire. No one seemed to know just how far down it was to mineral soil in most places - too far, probably.

It looks to us as though a period of three days with a humidity in the low 30's if preceded by 10 days or more without rain and accompanied by easterly winds is dangerous.

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DISTRICT 4 MEN FOR FIRE DUTY DISTRICT 1

On August 9 another call for six D-4 officers for overhead fire work in District 1 was received. To fill this order the following men were sent: Mace - Cache; Buchenroth - Teton; Cox - Manti; Larson - Uinta; McKee - Wyoming; and Garner - Wasatch. Later in the day Forester Greeley wired from Sand Point, Idaho, to increase the previous order for men from six to ten, six of them to go to Spokane and four to Missoula. Supervisor Humphrey from the Manti, Assistant District Forester Woods and Morse and Supervisor Shepard from the Wasatch left in response to this request. On August 13 another telegram from the District Forester at Missoula requested four additional experienced Forest officers from District 4 to strengthen the fire forces in the northern Idaho country.

Those who had already gone to District 1 for fire duty from District 4 previous to the above requests are Rice-Cache; Stock-Minidoka; Folster-Fishlake; Strong-Caribou; Olsen-Fishlake; Albano-Wyoming; Brackett-Humboldt and Smith-Wasatch.--District 4.

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D-1 CLOSES FORESTS

An order closing the Kaniksu, Pend Oreille, Coeur d'Alene, Kootenai, Blackfeet, Flathead, and Lolo National Forests to all forms of entry without permit has been issued by District Forester Morrell. The forest fire situation has reached such a serious state that drastic action has become necessary both for the preservation of the forests and the safety of the public.

Decision to extend the closing order was reached as a result of consultation between Mr. Morrell and Colonel Greeley, who came to the District on account of the serious fire emergency existing here. While certain Forests and portions of others have already been closed to smoking or camping, or both, this is the first order closing whole Forests to all forms of entry. Many large fires are burning uncontrolled in the Forests affected, and the presence of the public is unwarranted until the situation changes.

The Forest Service is fighting with all the men and means available, but in the face of the hot, windy weather and lack of precipitation, has not been able to gain control of the fires. We cannot afford to take chances on the additional fires which might result from recreationists, berry pickers, and the like, and cannot be responsible for their safety, should high winds ensue.--District 1.

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PAUL BUNYON'S SON?

By W. J. Brokenshire, Mono

In the early 80's in the Pine Grove region of Nevada a tibia bone of a prehistoric man was unearthed by Alzie Shields, a prospector now deceased. The bone was said to be approximately three feet long from knee to ankle with a width of approximately twelve inches at the knee cap.

Edward Raycraft, who was driving a stage at that time, brought the bone into Carson where it was put on display in the Carson public library. The doctors in Carson at that time examined the bone and made the statement that it was the tibia bone of a human, who judging from the size of the bone, was at least eighteen feet in height. Footprints in sandstone of a large prehistoric race are on display in Carson, but I believe that Shields was the first to discover a part of a skeleton.

Raycraft and Shields declined several offers for the bone, but it was loaned to a would-be curator and has never been seen since. Raycraft has secured a map of the location of the find and is going to search for the remainder of the skeleton.

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BUSTER KEATON AS A FIRE FIGHTER

By John D. Guthrie, D-6

One B. Keaton in July was making a big Civil War movie out from Cottage Grove, Ore. The movie is called "The General." A train, or at least an engine, was used. It was a wood burner-1862 model- in fact was one which the Forest Service had absolutely refused to allow to be used on the

Anderson & Middleton sale on the Umpqua. This old relic was said to be a regular fire-spreader, which was proven when Buster had it out "on location" on July 19 - that hot Sunday. It done its stuff - and "General" B. Keaton and his Blue and Gray armies - several hundred strong - had to turn into fire fighters, using their Civil War coats, or anything, to beat out the flames. How some of our real fire fighters would have enjoyed seeing these movie folks at work about that time!

The Portland Telegram had this to say about Buster's real fight:- "Buster Keaton's frozen face was thawed out before the flames of a forest fire, started by sparks from his ancient locomotive. At least, he did his best to undo the mischief he had done, and Buster in B.V.D's at the head of a united army of the Blue and Gray should have made a film of historic interest. We trust the cameramen were on the job."

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WASHINGTON NOTES

California Forests Closed to Smoking. The entire areas of the Angeles, Cleveland, Klamath, San Bernardino, Santa Barbara, Sequoia, Shasta, Sierra, and Stanislaus Forests have been closed to smoking except at camps or places of habitation. They have also been closed to public use except under permit.

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One Hundred Thousand Persons See Forest Service Slides During Year. That people everywhere are interested in forestry is evidenced by the large use of Service lantern slides during the year closed June 30, 1926. Slides circulated from the Washington office were shown in 30 States and the District of Columbia to more than 100,000 persons, most of whom were children or young people in elementary or high schools, or students in normal schools or colleges preparing to teach.

Requests for the use of the Service's special lantern slide sets came in from all States east of the Mississippi, with the exception of Rhode Island and five of the Southern States. The Lake States and the Middle West asked for large numbers of slides and several sets went as far West as New Mexico and Arizona and as far north as South Dakota.

Pittsburgh headed the cities in the use of material in public schools; more than 18,000 students saw the slides as a part of their regular curriculum. This might be expected in Pennsylvania. The New Jersey State Museum, at Trenton, maintains an extensive slide service and last year reported that the forestry slides were extremely popular and that they were viewed by something over 21,000 persons. Mr. F. E. Heald, Agent for Agricultural Teacher Training, Amherst, Mass., in continuance of his custom of routing Forest Service slides to agricultural schools and departments, brought the subject of forestry and the work of the Forest Service to the attention of more than 1,500 young people who are in a peculiarly good position to preach the gospel of growing timber as a crop.

In addition to regularly organized educational institutions, there were many other users of material, such as lumber companies keenly alive to the value of teaching their employees and the population in and near their holdings the need for care with fire in the woods, women's clubs, business men's blubs, churches, and Boy Scout and other camps. Camps, in fact, were important users of our special lantern slide sets.

It is a significant fact that young people all over the country, and those who have the training of youth are learning something of forestry. The coming generation cannot reach manhood without getting in school or camp a pretty clear idea of what forestry is, how great is the need for it, and what the United States Forest Service is doing.--B.G.G.

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Leaves the Service. Arnold C. Shaw, Assistant in the Office of Management, Eastern District, has resigned to become Field Secretary of Smoky Mountains, Incorporated, of North Carolina. Mr. Shaw's new job will involve the examination, valuation, and purchase of land in North Carolina for the proposed Smoky Mountain National Park.

Mr. Shaw's going is a distinct loss to the Eastern District. Nevertheless his long experience in National Forest acquisition has eminently fitted him for the new work and it must be admitted that the Park Commission found the right man for the job.

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SOME NEW TECHNIQUE

Washington, July 28.---------Responding to a request from the Forest Service, the War Department today telegraphed the quartermaster intermediate depot at Chicago to ship at once 5,000 army blankets for use in beating out forest fires along the Canadian border in Montana.--Spokane Chronicle, July 28.

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Service Bulletin

U.S. FOREST SERVICE
(Contents Confidential)

Vol. X, No. 34. Washington, D. C. August 30, 1926.

BAND-TAILED PIGEONS AND MULE TAIL(?) DEER

By Will C. Barnes, Washington

For several years past many Forest Supervisors in the Rocky Mountain region and the North Pacific Coast country have been reporting increasing numbers of wild pigeons which most of the Supervisors refer to as "band-tailed" pigeons. Several of them, however, express the belief that these are the supposedly extinct passenger pigeons, which in some way have come to life again.

In order to get the matter straight the question was referred to the Biological Survey for their opinion as to whether or not these could possibly be the passenger pigeon. In their opinion these are the "band-tailed" or "white-tailed" pigeon Columba fasciata, a bird which is found from western Canada, all over the Rocky Mountain region, as far east as western Texas, and south to Nicaragua and Central America.

Dr. Shufeldt, who is an authority on these birds, states (American Forestry Magazine, Oct. 1922) that they are frequently mistaken for the passenger pigeon. They are a large bird, Dr. Shufeldt says, and can be recognized easily by two distinguishing marks, the first being the tail, which has a wide black band extending clear across the tail feathers. The tail is square and not sharp-pointed as in the passenger pigeon. The second definite method of identifying this bird is a white collar, about ½-inch wide, on the back of and extending 2/3 of the way around the neck. Because of this the bird is also known as the "white-collared" pigeon.

The plumage is iridescent or "bronzy," especially on the sides of the neck, which was not the case with the passenger pigeons.

The band-tails build a very frail, shiftless nest, sometimes on the ground but in the majority of instances in bushes or trees. Ordinarily they lay but one white, shiny, egg, although occasionally two eggs are found in a nest.

This is undoubtedly the bird which is now appearing in such large numbers on many of our western Forests. It has probably come back because of protective legislation in the majority of the western States.

The Biological Survey is greatly interested in this increase in band tails, and we will be glad to have every Supervisor on whose Forest they appear make a brief report on them in his 1926 game report.

"Mule Tail" Deer.--A number of Supervisors seem to have discovered an entirely new kind of deer which they are calling "Mule Tail Deer" in their annual game reports. Undoubtedly they refer to the common "mule deer," so called because of their unusually large, mulelike ears. In the Southwest and Old Mexico where they are very common the natives call them "Venado Burro," literally "burro deer." Their proper name is Mule deer.

These are the largest of our western deer and can be told easily by their large upstanding ears, but also by the "White Pillow" which each carries behind him. This white spot is very like the white spot on the rumps of antelope, but the deer has not the peculiar power of erecting the stiff white hairs in this white patch that the antelope has when scared or excited. In the mule deer the white spot is shield-shaped and about eight inches across the upper part next the tail. The tail of these animals is also pure white with a tiny tip of black at the extreme lower end. With these points in mind no one can be at a loss to properly identify the Mule deer.

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SHARP UPWARD TREND IN TIMBER BUSINESS

By Harry Irion, Washington

In receipts, amount cut, and contract value of cut the timber business transacted on the National Forests during the year ending June 30, 1926, surpassed in a notable degree the previous high mark established during the fiscal year 1924. Specifically the 1926 figures show a gain of 10.7 per cent in timber receipts when compared with those for 1924; approximately 9 per cent increase in the contract value of timber cut; and 4.3 per cent in amount cut. The gain in 1926 over 1925 is even more impressive, being 14.3 per cent in timber receipts, 19.9 in contract value of cut, and 16.7 per cent in amount cut. District 5 shows the largest increase over the preceding year in timber receipts but is $8,104 short of its 1924 mark. Districts 1 and 6 continue to turn in substantial increases in timber receipts, the former beating its next highest year by 17.2 per cent and the latter by 14.5 per cent. The first and fourth quarters of 1926 with timber receipts of $1,101,579 and $1,043,468, respectively, outstrip any previous quarter in this respect, and for the first time exceed the million dollar mark.

Last year sixteen Forests turned in timber receipts of more than $50,000 each, and in the big year of 1924 there were seventeen. But 1926 tops them all with nineteen such Forests, 10 of which exceeded $100,000 each, four $200,000 each, and that great revenue producer the Coeur d'Alene fell short of the $300,000 mark by only $918, thus establishing a new high record for a single Forest. Of the 1925 select group only the Coconino and Cascade failed to get over the line in 1926, the former losing out by a very narrow margin. The newcomers are the Pend Oreille, Shasta, Sierra, Santiam, and Wallowa.

The following tables give a more detailed and complete summary of the 1926 timber business.

Table 1.—Amount and contract value of timber cut under commercial and cost sales, and receipts from timber sales and timber settlement during fiscal year ending June 30, 1926.

District	Amt. Cut M feet B. M.	Contract Value	Receipts from Timber Sales and Settlement
1	141,011	$647,427	$599,876
2	128,927	381,001	364,613
3	50,025	111,316	125,736
4	78,569	161,090	150,965
5	291,850	857,150	913,375
6	397,257	891,546	878,105
7	46,676	221,304	226,465 (a)
8	58,202	99,782	92,953
Total	1,192,517	$3,370,616	$3,352,088
Increase over 1925	170,638	$662,611	$418,431

(a) Includes $18,576 from turpentine sales

Table 2.—Per cent of increase or decrease in timber receipts and cut during fiscal year 1926 as compared with fiscal year 1925.

District	Per Cent of Gain or Loss in Timber Receipts	Per Cent of Gain or Loss in Timber Cut
1	+ 17.2	+ 11.3
2	- 14.1	- 14.2
3	- 8.9	- 29.3
4	+ 2.9	+ 21.2
5	+ 43.3	+ 41.0
6	+ 16.2	+ 30.2
7	+ 6.1	+ 6.2
8	- 12.6	+ 5.0
All Districts	+ 14.3	+ 16.7

Table 3.--Forests with timber receipts in excess of $50,000 during fiscal year 1926, and the leading timber revenue-producing Forests in Districts 3 and 4.

District	Forest	Timber Receipts	Amount Cut M bd. ft.	Contract Value
1	Coeur d'Alene	$299,082	39,004	$314,117
	Kaniksu	138,563	31,946	148,566
	Pend Oreille	50,501	12,476	25,410
2	Harney	84,817	19,352	85,487
	Medicine Bow	61,157	28,648	75,847
3	Coconino	46,721	13,774	30,737
4	Boise	30,110	19,219	40,943
5	Lassen	280,510	74,372	257,142
	Plumas	175,391	56,301	163,085
	Shasta	53,975	15,596	49,484
	Sierra	114,488	29,744	79,702
	Stanislaus	235,194	86,181	242,274
6	Crater	208,139	64,523	215,961
	Deschutes	102,013	28,729	95,563
	Olympic	110,557	71,170	108,710
	Santiam	61,851	33,317	58,258
	Snoqualmie	109,430	65,268	116,032
	Wallowa	56,821	21,943	50,500
	Whitman	89,278	31,352	92,683
7	Ouachita	90,382	14,711	108,115
8	Tongass	84,781	52,628	90,704
	Total	$2,483,761	$810,254	$2,449,320
Per cent of Total for all Forests		74.1	68	72.7

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FIRE SLOGAN ON TENT DOOR FLAPS

The National Board of Directors of the National Tent & Awning Manufacturers Association, at their recent semi-annual meeting in St. Paul, Minn., approved a suggestion by Assistant District Forester W. I. Hutchinson that all tent manufacturers stencil on the door flap of their tents the slogan "Help Prevent Fires - It Pays." This recommendation of the Board of Directors will be presented to the trade at the National Convention to be held October 25, and all members of the Association urged to cooperate. Hutchinson's idea is that a slogan thus placed will forcefully call the attention of all recreationists to the necessity of care with fire, not only when in camp but every time they fasten or unfasten the tent-door flap.— District 5.

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A RANGER'S WIFE TALKS

By Mrs. Albert Yochelson, D-4

A Ranger's Wife Talks:

Somebody has said that if the practicality had been considered, the great events of this world would never have been accomplished.

This has often recurred to me when I made a resume of all that being a Ranger's wife entails. I feel sure that other Ranger wives have often experienced the same mental analysis of its worthiness in so far as its practical side is concerned and its material compensation. Not that we should have reconsidered our choice of husbands - rather that they should have reconsidered their choice of a job. However my analysis of the position has always made me exceedingly thankful I was not practical.

I was grossly ignorant of a Ranger's work and of Rangers generally speaking, previous to and upon entering my new sphere as a Ranger's wife. Surely, I knew him as a romantic figure, who poses for eastern tourists on his sleek black horse dressed immaculately in a "take your eye costume" eulogized as "Guardian of the Forests." I did not know him as I have come to know him, a frightful aspect appearing after being out on a two weeks' fire with a two weeks' growth of beard and whiskers; with a faithful, though not at all handsome horse, that responds to a strange assortment of endearing (?) words. I have come to know him as the "Guardian of the Forests" in a much broader sense. He guards its ranges from trespassing sheep and cattle as well as from fire. I have found him to be still a figure of romance if one can accept romance, even after the hard stern realities are exposed.

I do not believe there is any work in which man and wife can more truly work side by side as comrades than in forestry, especially in the status of Ranger. Though my ignorance of the true nature of the work was astounding, I soon became exceedingly familiar with it from a technical, idealistic, practical and cussing standpoint. In my close association with it I could not do otherwise. On every possible opportunity I accompanied my husband on field trips, though I wish to state emphatically never on a fire.

After a fire was reported, and immediate preparations were being made to go to it, I made myself as inconspicuous as possible. I did not even dare proffer my services after the time I attempted to pack some things for my husband and put in his pajamas. Right here I learned the importance of haste, of a light pack, and of taking only the very necessary items.

When reports called for attention I even tried my fingers on the old stand-by, the Oliver typewriter. I suppose because it responds so magnanimously to the often unsympathetic touch of the ranger (it being very strong) it is accorded the position of favorite. I experienced considerable difficulty learning a Ranger's diction. His language is hardly euphuistic. He is not partial generally to words of many syllables and I found Sears Roebuck catalogue considered by some undisputed authority.

On my extended field trips with my husband I learned to bear with Spartan courage aching bones, after a horseback ride of thirty miles, a burning skin, and parched lips. Vanity died a natural death in the face of the indescribable charm of the wild, so that freckles and sunburn received no notice. I found I could subsist admirably upon pork and beans and "Ranger's Delight," a dish reeking of the mystery of the Orient. However, when one becomes more familiar with it he finds it to be eggs as a background combined with cheese, onions, a generous dash of pepper and any other scraps that may be utilized successfully or otherwise. These are traditional Ranger's dishes, from which I can gather, and anyone who cannot like them has lacking an essential taste needed in the Service. I mastered the art of throwing the diamond hitch, though Sambo just would not obey when spoken to decently. He was a Ranger's horse and responded accordingly.

I never counted stock. Mathematics always made my head turn, so while my husband counted them I sat by watching BillxJones size up the Ranger as to how many more he could turn out on the range.

Thus through my close association with my husband and his work, my knowledge expanded and with the expansion grew the ideal and love of it. At first it did not mean this to me. I had to accept the work to get my man and I accepted it as something inevitable. Now that acceptance is a God-given ideal.

So many of my friends and my family have asked me, "What is the work of the Ranger?" I cannot specifically answer that question for all of my contact and association with the work. I wonder if anyone can. Before I married into the family, meaning the Service, one kindly, gruff old stockman characterized it to me as "A good job for a lazy man." How I wish he might change jobs with the Ranger! He would find he had to be diplomat, lawyer, mechanic, preacher, doctor, and goat, besides being a Forest Ranger; he had to possess a fair knowledge of all the arts under the sun; to bear stoically all the complaints of the permittees, and the usually justifiable upbraidings of his superiors for certain work not being accomplished, though how a dozen tasks are to be done at once has never satisfactorily been solved. Yes, the Ranger can push Job entirely off the stage.

Humbly, though staunch in my belief, I should like to give my viewpoint of the Service, the men, and what it means to me.

The Service embodies idealism, loyalty, and brotherhood all tending toward a noble and lasting work, the conservation and proper distribution of our natural resources. The men individually are of the highest type of manhood and moral stamina. They could not be otherwise. Nature leaves her clean indelible mark of character on them. They are men of tried and tested strength, the weaklings are soon weeded out and lost after the stern realities and dull routine appear. They are men who are idealists, who see that through their work they are upholding the principles that mark us as a great nation.

It means to me all the pride these words can convey, "I am a forester's wife."

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MORE ABOUT PICTURE TAKING

By W. M. Rush, Absaroka

Mr. Shipp's "Look, World" article in the July 26 issue of the SERVICE BULLETIN brings out some remarkable facts about the picture collection. A person wonders what there is left to photograph after 200,000 pictures have been taken.

An individual's record may be of interest to theBULLETIN readers. My personal collection of negatives numbers a little over 300 and cost just about a dollar each. All of these were taken before the war. The Service was allowed to high-grade this collection in 1919 and gleaned therefrom some thirty negatives for their collection. Since the war the Service has paid the photographic bill and I have sent in 216 negatices, only about a dozen of which were unsuited for the District collection. My practice is to have all films developed locally and then send to Washington only the good negatives. These 216 negatives have cost the Service about 15 cents each, which is the average cost of the 200,000 in the Washington collection. The low cost of 15 cents each for 200,000 negatives is remarkable, and if half of these were discarded bringing the cost of the balance up to 30 cents each it would not be too much for good negatives.

The pocket camera is to a ground glass camera just what a Forest Service compass is to a transit. It is a hit and miss affair, with an awful lot of misses. I for one have been willing for the past four years to lay aside the 3A Special for one of the heavier cameras but the old cameras seemed to have vanished into thin air. Of course, for all back packing purposes the 3A Special cannot be excelled. I would surely not want to contract to carry the old equipment on my back for a long snowshoe trip viewing game conditions.

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THE FIRE SITUATION

Three days of rain in District 6 and the western part of District 1 last week greatly relieved the fire situation there. A report received from District 1 says that approximately one inch of rain fell in the three days and that all the fires are under control. The information from District 6 is that the rains were quite general and that conditions are now very good.

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KOTOK, DIRECTOR CALIFORNIA FOREST EXPERIMENT STATION

Edward I. Kotok, for 15 years an officer of the California District, has been appointed Director of the new Forest Experiment Station to be established in this State.

Director Kotok brings to his new position a wealth of practical experience in the important phases of fire control and forestry research. Starting work in California as a Forest Assistant on the Shasta National Forest in 1911, he steadily advanced to the supervisorship of the Eldorado National Forest, and in 1919 was assigned to the important work of fire inspection for all National Forests of the State. He also has had charge of planting work in northern California, inspector of State work under the Clarke-McNary Act, and is the author of many Government publications dealing with the problems of fire and forestry practice.

The other members of the California Forest Experiment Station staff already selected are: Duncan Dunning, silviculturist of the District headquarters at San Francisco, A. E. Wieslander, Technical Assistant from the Lassen, and H. A. Siggens, Junior Forester. Two additional assistants will be appointed at an early date.--District 5.

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GAME IN THE EASTERN DISTRICT

The game estimate for the year 1925 shows that there are in the Eastern District an even dozen Federal game refuges and preserves, including those on Military Forests, with a total area of 279,859 acres. There are seven State game refuges with an area of 148,688 acres, or a total of 428,547 acres of land where intensive game management has been initiated. The game estimate is interesting and shows 12,253 deer, 541 bear, 345 elk, 183 buffalo, and 16 antelope among the big game animals. The predatory animals are represented by 167 coyotes and wolves, 7,715 foxes and 5,159 wildcats; and among the fur-bearing animals we find a total of 7,870 raccoons, 7,400 skunk and civet, 4,000 ermine, 2,150 opossum, 1,775 mink, 200 marten, 50 beaver, 40 otter, and 30 fisher. There are also large numbers of rabbits and squirrels.--District 7.

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ONE FLIGHT UP

By J. M. Wyckoff, Tongass

It was my pleasure and privilege to be the first Forest officer in Alaska to take a trip in a plane with the Navy detail, sent to Ketchikan to make an aerial map of Alaska. The plane used for the day was the "Polar Bear." This is the same machine used by Lieut. Byrd on his 1925 Arctic flight.

The day was ideal. "A dead calm rested on the bay, the waves to sleep had gone." A few light clouds rested at altitudes of 3,000 feet or more. Pilot Alexander sat forward and held the stick. I sat aft and held the plane tight with both hands.

We hopped off down the channel and soon lifted over the low hills of Pennock Island, then away to the west to Clarence Straits. Pretty soon I let go of the plane and she seemed to work just as well. I even looked out, and the weight of my head to one side did not seem to "list" her any. Then at an altitude of 1,000 feet we did the "grand right and left" and I could look right down without much muscular endeavor. We straightened out again and kept on climbing; 2,000, 2,500, 3,000 and here I found I could get a pretty good view of the country. Occasionally we passed through a small patch of clouds. They would whiz by with the speed of a couple of hawks. Making another swing around to the north we kept on getting altitude, and a most wonderful view of a small part of my ranger district. Topographic features were revealed that we never dreamed of. Lakes, lakes, lakes! On one small peninsula I counted 12. The long arms of salt water indenting the many miles of shore line came into view, and finally at an elevation of 8,000 feet the view was truly wonderful. At this elevation we ran into a cloud of sleet. Gee, but it was cold. While I wore a helmet and jacket, my trousers ballooned like a sailor's and the cold air whistled through the bars of my henskin undies like the hum of a mosquito.

It is beyond the efforts of this poor pen to picture the scene or chronicle the emotions of this flight. Much to my surprise I did not feel shaky or timid or scared. I had so admired the Navy planes as sturdy ships that there was no thought of disaster. There was no particular thrill to the ride itself - until we started down. From 8,000 feet to 5,000 feet we came at a rate of 140 miles per hour and from 5,000 feet to 3,000 feet in a little less than nothing flat. Then we circled Deer Mt. and the city of Ketchikan in grand loops and curves; the wings of the plane pointing to heaven and earth. The feeling was an aggravated case of a too sudden jump in an elevator. But you can see we got down all right. And since it did not rain throughout the trip we went right in to "chow" without changing our clothes.

Shortly after this trip Forest Supervisor Zeller and District Forester Flory made very interesting hops. Maybe they will tell you about them.

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COUGAR ATTACKS MAN

Presently those writers on whom the keeping of the record devolves will revise the chapter, or the paragraph, dealing with the deportment of cougars. For long the ferocity of the cougar has been denied, and repeatedly the statement has been made on high authority that the cougar will not attack man. This despite the traditions of an earlier generation which tell that the cougar used to attack and possibly so often as to promote the lively respect of the backwoodsman.

In the Pacific Northwest, during the past few years, there have been several well-authenticated reports of such attacks. In one of these the victim, a small boy of Okanogan County, Washington, was slain and partially devoured. The most recent report comes from Tillamook County, Oregon, where a cougar attacked a hunter, who was fortunately accompanied by his daughter. The girl bravely stood her ground and shot the animal, even as it attempted to maul the man. In this instance it is desirable to observe, for the convenience of future reference, that the great cat attacked without provocation, and when its intended victim was companioned. Like the statement that the cougar does not scream, the statement that it will not attack is thoroughly disproved. Yet both these statements have frequently been exploited as fact in print.

Individualism accounts, undoubtedly, for some of these attacks, and hunger for others. But these are equally plausible as explanations of the cause whenever men are attacked by wild beasts, in whatever quarter of the world. If it be agreed that the cougar is cowardly, let it also be conceded that the cougar is a most dangerous coward, and that the work of extermination should be expedited.--District 6 (Quoted from "The Oregonian")

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ATTRACTIVE FOREST FIRE EXHIBIT

This display was purchased from the Scene-In-Action Corporation, 1233 South Michigan Avenue, Chicago, and has been used almost continuously since a year ago last June - displayed in windows and at State fairs.

This is a picture of a forest fire with the smoke and flames rolling up in realistic fashion. The intriguing thing about it is how this realistic reproduction has been achieved. It consists of an electric light globe behind a transparency. Over the light globe is hung a transparent cylinder which carries a design with spiral marking. The top of this cylinder is composed of a windmill and the motion results from the pressure of the heat of the electric light globe against the blades of the windmill. A screen behind the transparency is opaque, except for certain spots, and as the shadows fall on the spots, the motion is outlined only in those parts of the picture desired. A poster below this picture reading "Everybody loses when timber burns" brings out the objective of the scene. Set up, the exhibit is about 2 feet high, a little over 1 foot wide and about 10 inches deep. It comes packed in a carton about $1\frac{1}{2}$ ft. by $1\frac{3}{4}$ ft. by $2\frac{1}{2}$ ft. Packed for shipping it weighs 36 pounds. It is very easy to handle, very light and inexpensive - $42.50 in Chicago.

This picture is one that would be appropriate in any coniferous region, since it shows no topography or timber type that is characteristic of a limited region. We have purchased three of these exhibits and they are being shown on every Forest in District 2 with great success.--District 2.

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Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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WHAT HAPPENED IN DISTRICT 1

(Editorial Note: While D-1 was fighting its grim battle behind a dense pall of smoke and flame, there was no chance for the rest of the Service to get any but the main outlines of the conflict. Now that the worst is over, D-1, at the request of the BULLETIN, has most courteously and promptly furnished the following account of the appalling fire season whose crisis has just passed.)

August 26, 1926.

The season of 1926 has been easily the worst since 1919. Except for the unusual windstorm of August 19 and 20, 1910, the conditions that year were not nearly so bad as 1919 or 1926. Since the beginning of this year there has been a heavy deficiency in precipitation. Coupled with this have come two or three of the worst lightning storms of record. They brought no rain, and in their wake has followed one of the most protracted spells of hot, windy weather the District has experienced.

The Forests in the northern part of the District were hardest hit. From the Kaniksu in Washington to the Flathead in Montana, the only Forest to escape is the Cabinet. Along the Canadian border a well-nigh solid string of fires were set on July 12. Several hundred fires were started and spread with unusual rapidity, joining each other to form fires so large that men could not be assembled fast enough to cope with them. The Kaniksu, Pend Oreille, Blackfeet, and Flathead are the worst afflicted, whereas in 1919 the greatest losses occurred farther south, centering in the Clearwater and radiating to the Selway, Nezperce, St. Joe, and Lolo. The rains of August 16, 17 and 18 were a veritable godsend, for with the vast amount of uncontrolled fire, a wind such as the one of 1910 would have resulted in another catastrophe, involving incalculable loss of property and probably human life. That was the possibility we faced for more than a month, but instead of the wind we got rain, and while the dry, hot weather that followed has resulted in difficulties and breaks on some of the fires, it is safe to say the crisis is past.

A brief account by Forests will tell the story in more detail.

The Kaniksu, following the awful year of 1925, is again the hardest hit of any of the Forests. The protection organization had scarcely recovered from the strenuous efforts by which it had conquered the 50 or more lightning fires set on July 6 when the storm of July 12 came. The number of fires set by this later storm will never be closely approximated. They kept showing up for days, and with every available man hitting them, the job of reporting them even could not be thoroughly done. The smoke became so bad within a day or two that many of the fires probably were never seen, and, since they eventually joined or were encompassed by big fires, they cannot be recorded. By July 14, 125 fires had been reported to the Supervisor's office, 12 of which had already reached 50 acres or more. On July 15 the number had swelled to 147 with many more put out but not reported. Four had by this time covered over 400 acres each, with 30 other Class C and 25 Class B burning uncontrolled. On the 16th, 42 fires had reached Class C size and several were approaching the 1,000-acre mark. The weather continued dry and windy and little progress was possible. It will be seen that the number of fires on this Forest and the rate of spread was such that it was humanly impossible to gain control of them. Men were not available and could not be secured, equipped and put on the ground fast enough to give the slightest chance of success in these first four days, and in the meantime the fires had reached such size that the chance of control was still more remote. It became a question of weather rather than men.

The Forest had been literally dotted with fires, as though some giant conflagration had sent its flames high overhead, dropping firebrands to set innumerable spot fires. More than a hundred of these were controlled in those first four days, which is an excellent record for the protection and crew men. Still others were trenched after reaching Class C size, but much of this success was like paper profits only, for literally dozens of the fires which were controlled through trying exertion are now within the boundaries of the vast burns resulting from the ones that could not be reached. Wrapped up in these burns also are hundreds of the controlled fires of previous seasons, rendering that work largely of no avail. The results reach backward to rob us of past gains as well as forward to mortgage the future.

By July 18 the Air Patrol estimated the area burned on the Kaniksu at more than 20,000 acres, and the number of men employed on them then approximated 800. None of the large fires had been controlled. A high wind on this day made it the worst of the year so far, and resulted in doubling the area burned. Many crews had to abandon their lines and their camps. By July 26 the acreage burned was estimated at 55,000 acres or approximately 10% of the entire Forest, and the number of men employed was 1100. The lookouts had become almost entirely ineffective and even the airplane patrol was hampered by smoke. On August 1 the area had increased to 75,000 acres, and 1,450 men were combating the flames. The final estimate is 130,000 acres.

Pend Oreille: The lightning storm of July 12 crossed the Pend Oreille Forest where it started more than 40 fires. Most of these were controlled, but the Caribou, Snow Creek, and Grouse Creek fires spread in spite of all efforts. On the 14th the Caribou Creek fire covered 800 acres, and heavy winds on the 15th spread it to 2,000 acres. On the 17th it joined with the Snow Creek fire. On the 15th the Grouse Creek fire had reached 2,000 acres and was still spreading. On the 17th, 45 fire fighters and 2 Government pack strings were trapped and given up for lost, but later finally got out, with one string of pack animals badly singed. By July 20, the Forest had lost 13,000 acres and was employing 350 men. By July 23 the Caribou fire was estimated at 10,000 acres. The Meadow Creek fire covered 1,000 acres on July 25, and gave much trouble. On July 31 another bad day came and the Caribou and Meadow Creek fires ran wild, covering a combined total of about 25,000 acres; new fires started on Cedar Creek and near Katka, the latter covering a section. Over 400 men were fighting on that date. August 3 brought another bad break in all fires on the Forest. On August 9 heavy winds carried the Meadow Creek fire to the Copeland Highway on the west and almost to Mission Creek on the north, while the Twin Creek and Tumbledown fires spread badly. On a rough estimate, 50,000 acres have been burned, and even at this date 400 men are still on the fire lines.

Coeur d'Alene: The history of the fire troubles of the Coeur d'Alene to date is a history of the Independence Creek fire. From 1,000 acres on July 11 to probably 35,000 acres on August 10, it is a history of repeated blow-ups, lost lines, and camps lost or abandoned, all contributing to an almost continuous spread and the loss of much valuable timber.

Clearwater: Like the Coeur d'Alene, the Clearwater has had but one fire reach large size. This is on Collins and Skull Creeks in the northwest part of the Forest near the boundary of the St. Joe. One of the greatest obstacles has been its inaccessibility. Men and supplies have largely been taken in by way of Superior, Montana, and Avery, Idaho. It started about July 12 and was first hit by men from the St. Joe, but it spread too rapidly to be controlled. By July 19 it had covered 2,000 acres and continued to spread in spite of the 200 men fighting it. It is now estimated at 15,000 acres and has been controlled. It is largely in the 1910 and 1919 burns, which fact, coupled with winds and low humidity, made it difficult to control. The extent of held line makes the outlook favorable.

Kootenai: The storm of July 12 set more than 40 fires on the Kootenai, and on the 15th 11 large fires were reported burning uncontrolled. One of these in the "Yaak Blowdown" was extremely menacing. By the 16th the number of fires had grown to 15, 8 of which were already under control. On the 16th the "Blowdown" fire had reached 1,500 acres, on the 17th, 2,800, and on the 19th, 3,200. It was placed under control on July 20 at a final area of 3,400 acres, and only two others were reported out of control. Other new fires occurred, but at no time since has the situation been seriously out of hand.

The Blackfeet flashed to the front on July 11, when the Hay Creek fire spread to 3,000 acres in a short time. On July 15 this fire jumped the North Fork River and burned 300 acres in Glacier Park. On July 24 high winds made progress impossible, the 250 men being employed in an effort to hold the lines already established. On July 27 fires on Good Creek were reported as covering 5,000 acres, and other new fires started. On July 29 fire jumped the river from the Park and threatened the Big Creek Ranger Station. The fires on Good Creek and others in the vicinity of Olney ran wild, reaching 10,000 acres. On July 30 the Hay Creek fire was estimated at 15,000 acres and the Olney at 12,000, and more than 300 men were fighting the different blazes. The Fortine fire was reported on that date at 600 acres, and on August 31 it wiped out the town of Stryker on the Great Northern. The rainfall was lighter here than on the other Forests, and on August 25 serious outbreaks on the Hay Creek fire and one new fire resulted in rushing in more men. Unless the weather should turn more favorable, serious losses are still possible in spite of every effort to prevent them. The area burned to August 20 is approximately 70,000 acres.

Flathead: Up to July 30 no loss, of importance, had occurred on the Flathead. On that date two fires were reported, one of which spread till it was a mile long, and the other, the Babcock fire on the Upper South Fork, covered 2,000 acres. Within a week these fires and others that started later had burned a total of about 50,000 acres. The rate of spread was phenomenal, for while the number of fires was not so great, the acreage burned in a week was as great as that burned on some of the other Forests in a month. Moreover, some of the big fires were in the back country, making it slow and expensive to put men on them. With the high winds and fires spreading at such a rapid rate, no adequate attack could be launched. Within ten days after these fires got under way, more than 300 men had been put on. The latest figures available place the area burned at 73,000 acres.

General: From the point of comparative safety which has now been reached, we can look back on the struggle as a most strenuous one. At the peak more than 4,000 men were employed, and half that number are still on the lines finishing the trenching, mopping up and patrolling. Thousands of miles of line have to be guarded till the next storm at least. The Kaniksu alone has 700 miles of fire line, and much line has been lost. Equipment for only about 2,000 men was on hand, which meant that the last 2,000 put in the field had to be equipped through purchase as they were shipped. The task of supplying this special equipment alone was tremendous. Pack stock proved a difficulty. Only for the system of Central Purchase, which has been perfected in the District, it would have been impossible to supply the necessary equipment and food. Overhead was another problem. The eastern Forests were pared to the bone, both Supervisor and Assistant Supervisor, as well as one or more Rangers, being drawn from a number of them. Districts 2 and 4 furnished about 20 men each.

Seasons like this put the Service to a severe test. They show up the weak places in our plans and presuppression efforts, and the lack of equipment. They show up individual mistakes and failures, and point to the need for continued preparation and training, as well as for thousands of miles more of trails to give ready access to every part of the Forests.

The losses have been tremendous, although many of the fires were in old burns and in less valuable stands. It is not possible at this time to form an estimate of them. The cost of suppression to date is nearly a million dollars, and it is sure to exceed that considerably before the work is finally completed. The total area burned is now estimated at 400,000 acres. The number of fires has not been so great this year as in a number of other years. Out of the 1,235 reported to date, 902 are lightning fires. It can be said that man-caused fires have not been a serious factor in the tremendous losses of 1926, but there have been too many of them at that, and there is still room for improvement. There is not room here to consider the things most needed for the control of lightning fires in seasons like this, but that is, after all, the big fire problem of the District, and the one to which the men of the Service must address themselves with greater thoroughness than ever.

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MATCH THIS IF YOU CAN, KETCHIKAN

Pensacola, the headquarters of the Florida National Forest, was deluged with 8.48 inches of rain, Weather Bureau measurements, during the 24 hours ending 7 a. m., August 26. The 'gators enjoyed it.

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CALIFORNIA SPORTSMEN AGREE TO PAY THE PIPER

(From news release by Associated Sportsmen's Clubs of California)

To forestall, if possible, the closure of the National Forests of California to hunters, fishermen, campers, and recreationists, now being considered by the Federal forestry authorities, representatives of the Associated Sportsmen's Clubs of California, conferred with the U. S. Forest Service officials in San Francisco yesterday.

The sportsmen pointed out that closure of the forests on September 1, when the deer season opens in the greater part of the State would deprive thousands of persons from the privilege of hunting, fishing, and camping in those attractive sections. Further that it would demoralize the sporting goods and outing equipment trade and work a very grave hardship upon the many resorts in the mountain districts.

Full well realizing the necessity for immediate and effective means of meeting the extremely serious fire condition, the sportsmen proposed that they themselves sponsor the raising of a fund sufficient to place an additional and adequate number of extra men in the National Forests as guards against the increased forest fire hazard due to the influx of travel attracted by the opening of the deer season. They further proposed that all persons entering the forests be registered and that this fund would provide the extra personnel necessary for that work.

The Forest Service agreed to this plan providing the proposed plan cut down the number of man-caused fires to a point that would meet the present critical situation.

In view of this the Associated Sportsmen's Clubs of California decided to broadcast an appeal to the lovers of the out-of-doors of California to subscribe to a fund of ten thousand dollars, which if raised within a few days will be the means of keeping the Federal forests open to everyone this year.

This fund is to be known as the Sportsmen's Emergency Fire Prevention Fund and arrangements have been made with the Federal Reserve Bank in San Francisco to act as trustee.--

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"The Forest Service is confident that the people of California will give hearty support morally and financially to the plan proposed by the Associated Sportsmen's Clubs of California," said District Forester S.B. Show. "Whether the National Forests remain open or are closed to public use now rests in the hands of our citizens who have a personal interest in forest protection and the use and preservation of the natural resources and wild life of our mountains."--District 5 News Item.

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YELLOW PINE REPRODUCTION VS. STOCK

A recent examination of the Mount Taylor summer range on which sheep have been excluded for the past two years shows some rather interesting results, according to the Manzano Ranger. There is practically no damage to yellow pine reproduction or aspen in spite of the fact that this range is of bunch grass almost exclusively and has been very heavily stocked by cattle and horses for the past two years due to the lack of feed on the lower ranges where it has not rained. All seedlings that were damaged prior to 1924 show two years' uninjured growth and are in an excellent way to complete recovery. It would pay anyone who has doubts regarding stock damage to yellow pine reproduction to see this area. It is believed that an examination of this area would settle in your mind this rather troublesome question. Don't take our word for it, we don't want you to, but come and see for yourself.--District 3.

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BAND OF SHEEP STRUCK BY LIGHTNING

On August 10 lightning struck a band of sheep on the Rio Grande National Forest killing 198 head. The total loss is estimated to be about $2,500. Supervisor Clarke, who reported the incident and furnished photographs, says this is the greatest loss by lightning that has ever come to his attention.

We learn, too, of a similar catastrophe in Wyoming about the same time, when 130 were killed out of a band. Lightning seems to have been unusually severe this year, and the wonder is that we don't hear of more such incidents. It is remarkable that more people, as well as animals, are not killed, since the high ranges where lightning is especially severe are so generally occupied.--District 2.

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SUMMER EDUCATIONAL WORK

By J. E. Scott, D-7

Five thousand National Guardsmen from Kentucky, Ohio, and Indiana, who will train at Camp Knox this summer, are to have a goodly measure of forestry worked into their training programs under arrangements initiated by the Cherokee. Our official motion pictures and slides will be shown regularly and at frequent intervals throughout the entire summer training period and supplies of official publications are being provided for the reading rooms and for distribution.

A similar program has been worked out by the Unaka for use throughout the summer at Camp Cherokee, where three camps, one for boys, one for girls, and one for adults, will be operated at different periods this summer.

A third interesting effort in this field is being made by Mr. Gross for the Meade-Humphreys-Eustis Group of Military Forests. At these camps, the C.M.T.C., the R.O.T.C., and National Guardsmen will have the benefit of a series of 5 Forest Serviee lectures in connection with their citizenship courses, including at least one reel of Forest Service motion pictures.

Furthermore, Gross has written an interesting little sketch covering the Meade Unit and another of the Humphreys Unit, a copy of which, in mimeograph form, will be placed in the hands of every man visiting these units this summer. On the last named group, we are going to reach at least 10,000 with our educational material.

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METEOROLOGIC STATIONS ESTABLISHED ON LOOKOUTS TO AID IN FIRE CONTROL

For the further prevention of forest fires through the securing of local weather forecasts, branch meteorological stations are being established at the fire lookouts in the National Forests of California. Each Forest lookout will be an observer, sending in each day to the Weather Bureau at San Francisco data on wind, humidity, state of weather, storms, etc. The information will be telephoned to the nearest telegraph office for transmission.

In the dry months when fires prevail, a daily forecast will be made by the Weather Bureau, and during specially hazardous periods forecasts will be made twice daily. These will be transmitted to field officers by the Forest Service headquarters in San Francisco.

Leslie Gray of the Weather Bureau has just completed the establishment of branch meteorological stations at the following points in northern California:

Bald Mountain, Eldorado; Banner Mtn., Tahoe; Turner Mtn., Lassen; Happy Camp, Modoc; Weaver Valley, Trinity; Sheetiron Mtn., California; Dry Lake Mtn. and Orleans Mtn., Klamath; Soldier Mtn., Grizzly Peak, Mt. Eddy, and Mt. Shasta City, Shasta; Spanish Peak, Plumas. Later he will establish like stations in the National Forests of southern California. Special data for the redwood region will be secured by the Eureka weather station.--District 5.

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STONEHATCHET VS. SPARKPLUG

Utilitarians and wild-lifers meet in St. Paul on September 3, under the auspices of the Forest Service, to discuss whether the Superior National Forest shall be kept as a roadless wilderness or be opened forever to the fumes of the flivver and the hot-dog. The utilitarians want their hot-dogs and the wild-lifers their wilds - and never the twain shall meet.

As usual, the Forest Service is the buffer between the contending factions and is expected to put forward a compromise measure that will quiet, if not satisfy, both sides.

The SERVICE BULLETIN hopes to have this interesting event fully covered.

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STOCKING THE CORONADO WITH WILD TURKEYS

The Arizona State Game Department is maintaining a game farm at the Ellison ranch where turkeys, ring-necked pheasants and other game are being raised. Just recently, according to the Tucson Daily Star, sixty young wild turkeys were turned loose in the Catalina Mountains and forty more will be turned loose near the John Hands ranch in the Chiricahuas. The turkeys are being freed in protected areas so that they will have an opportunity to safely become acquainted with their own territory. The turkeys released are about the size of full-grown quail. State Game Warden Pettis states that two full-grown turkeys are being released with the young ones to act as protectors. About 100 ring-necked pheasants will also be turned loose in the Catalinas this month. Arizona is beginning an effort to restock the State with game birds.--District 3.

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NEW TRAIN DEVICE CUTS FIRE HAZARD

To minimize the fire hazards Southern Pacific Company locomotives are being equipped with automatic track sprinklers, according to the general superintendent of motive power.

Practically all locomotives operated on the mountain district of the company's Sacramento division have already been equipped. Sprinklers are in continuous operation on all west bound trains between Blue Canyon, Summit and Roseville. Locomotives operated over mountain grades on the Shasta route are also sprinkler equipped.

Sprinklers extinguish sparks generated by heated brake shoes and greatly reduce possibilities of fires. The spray also keeps car wheels cool and adds considerably to the life of tires.--District 5.

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THE LOOKOUT TOWER

We should appeal in our fire publicity more than we do to the sense of sportsmanship and outdoor good manners. There is another type of "publicity" worth developing - what I shall call giving our temporary guests a feeling of partnership. I don't mean the "you-own-the-National Forests - Protect Them" type of appeal; but giving them some real insight into the job and making them feel as if they had some share in it.

Some striking posters have been recently put out by the Great Northern Lumber Company. Fifteen different types of posters carry such headings as "Vital Importance of Maine's Forests to Maine Industry"; "Good Forest Practice" "Maine's Forests Reproducing Spruce;" "Maine's Forests Produce $\frac{1}{4}$ of Pulpwood Cut in United States," with interesting discussions underneath. The text is perhaps a little too long; but the point is that each poster takes the reader "into the family" and gives him some actual insight into what the company is doing.

The Great Southern Lumber Company of Bogalusa, Louisiana, uses a similar type of intelligent and specific explanation of what it is doing.

Do we do enough explaining of our varied activities?--S.

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FRAME HOUSES REINTRODUCED IN ENGLAND

Advices received by building information agencies here tell of a novel departure in England. While building circles in the United States are discussing the feasibility of introducing the all-steel house, English builders are introducing the equal novelty in Great Britain of the all-lumber house. The London County Council, which has undertaken an extensive housing program, has just let a contract for the erection of two thousand all-wood houses, and for one thousand houses largely of wood, but partially using steel frames. Altogether the London County Council is erecting six thousand houses, three thousand being of brick and concrete.

So completely had wood gone out of use for permanent structures, since the virtual deforestation of England two centuries ago, excepting for joists, partition studding, and the like, that there were actually considerable serious discussions in England (analogous to that going on in this country now about steel construction for dwellings) as to whether wood was feasible. The experience of Scandinavia and the United States with frame buildings was brought forward, and learned arguments were presented to the London County Council setting forth the cheapness, durability, comfort and healthfulness of lumber-built houses. Curiously enough, this investigation brought out the opinion that owing to depreciation from rust an all-steel house would not last as long in the damp English climate as lumber construction.--From Nat'l Lumber Mfrs' Assoc.

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Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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PERTINENT LOGGING POINTERS

By W. R. Mattoon, Washington.

The public adopts new practices very slowly and usually as the result of a great deal of effort along various educational lines.

W. W. Ashe, Assitant District Forester in D-7, has worked up some very pertinent information on logging timber for profit and for perpetual operation, particularly as to the wastefulness and money loss of cutting small-sized trees. Several of his articles have appeared in the leading lumber trade journals during the past spring and summer. Studies carried on during the past 15 to 20 years form the basis for his conclusions.

An extract of the more essential pointers contained in these articles has recently been prepared in mimeograph form and sent out to the various extension foresters and State foresters in the southern States. Following is a copy:

Logging Pointers

It requires more than twice as long to fell and cut up 1,000 feet mill cut in trees 8 inches in diameter as it does in trees 25 inches in diameter.

It requires three times as long to skid 1,000 feet of lumber in logs 8 inches in diameter as in logs 20 inches in diameter.

It requires four times as long to load 1,000 feet in logs 10 inches in diameter as in logs 20 inches in diameter.

It requires more than twice as long to saw up into lumber 1,000 feet from logs 8 inches in diameter as from logs 20 inches in diameter.

Value of Lumber Cut from Trees of Different Sizes

Of equal significance is the relative value of the lumber cut from trees of different sizes. Shortleaf North Carolina pine 10 inches in diameter produces lumber selling at $26 a thousand. At 20 inches in diameter, the lumber sells for $32 a thousand. Yellow poplar 10 inches in diameter produces lumber selling for $29 a thousand. At 30 inches in diameter, the lumber sells at the rate of $48 a thousand. Red oak 15 inches in diameter produces lumber selling for $28 a thousand. At 25 inches in diameter, the lumber sells for $37 a thousand. The same is true of maple and birch; it is likewise true of West Coast timber. The differences are most significant with the high cost of logging in general, and with the higher cost of logging small timber the differences are trebly significant, for the operating value of the stumpage of the smaller timber is often negative.

One extension forester, upon his request, has received from the Forest Service and mailed out 1,000 copies of the extract to farmers and small sawmill operators, together with a letter of his own along similar lines. The message is beginning to reach the people who are in a position to take advantage of the information.

There is now in preparation an extract of a somewhat similar presentation by Raphael Zon, Director of the Lake States Forest Experiment Station, based upon studies of hardwoods recently carried on in that region. They too show that the logging of small-sized timber is an unprofitable business.

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FOREST CONSERVATION IDEAS OF FORTY YEARS AGO

By R. K. Helphenstine, Jr., Washington

In 1886 the Department of Agriculture issued Miscellaneous Special Report No. 10 entitled, "Descriptive Catalog of Manufactures from Native Wood." This report was primarily devoted to the description of the Department's forestry exhibit at the World's Industrial and Cotton Exposition at New Orleans, La. The information presented was based upon data supplied by manufacturers from various parts of the country through the medium of a questionnaire, referred to in the letter of transmittal to the Commissioner on Agriculture as a "special interrogatory." One of the questions apparently related to the subject of prospects of future supply and need of forest legislation. The following list of replies selected from a hundred or more are of interest, in that they show the views of manufacturers two score years ago on the general aspects of the forestry question, future timber requirements, and forest legislation.

Burlington, Vt.--Will be exhausted in twenty-five years at present rate of consumption. Native woods should be planted, and forests protected.

Mobile, Ala.--As far as the Gulf States are concerned, the pine would last the sawmills for perhaps a hundred years to come; but the timber will, I think, be practically gone in thirty years on acoount of the destruction wrought in the manufacture of turpentine and rosin. The work should be regulated by law.

Marshfield, Vt.--I am directly on the line of railroad, and cut nothing but the largest timber, leaving all of the small to grow up, which will be fit to cut in twenty or twenty-five years. It will surely pay to grow timber on or near lines of railroads better than any other crop.

New York City.--Unless some more effective mode is soon adopted to protect the forests and incentive offered to plant, we shall in a short time have to depend upon other counties for our supplies.

Canton, N. Y.--The State should own the lands on the headwaters of our rivers and should control the cutting of timber.

Chicago, Ill.--There is cedar enough to last for one hundred years, but it will be very expensive in twenty-five years from now. All railroads building west of Mississippi River, north of Missouri, and west of Missouri, south of Iowa, should have been forced to set aside two sections of land for each 10 miles of railroad built, for tree culture.

New Haven, Conn.--There is no question but what there will be a very small supply in the near future of the best grades of hickory and ash. They are very scarce at the present time, and we would advocate a law which should prohibit cutting either hickory or ash trees under a certain size, and also pay a subsidy to farmers who will plant a certain number of these trees at certain distances apart annually.

Philadelphia, Pa.--There is no question but that the timber is being cut faster than it grows. The amount consumed by the railroads for ties, in addition to the increased demand from abroad and the regular home consumption (constantly increasing with the increase of population), must force upon the country the necessity of legislation similar to that existing in Sweden, Norway, and Germany.

Bristol, Conn.--If I were a young man I would put one third of my 30 acres in black walnut and wait for it to grow; would reap a rich reward in day's decline.

Dayton, Ohio.--At the present rate of unnecessary slaughter of timber, the country will be denuded in twenty-five years (hard maple). The larger forests are purchased and cleared for the profit there is in the timber. The farmer who has 100 acres of land, with 15 to 20 of it forest, says: "The taxes are so great, and the yield so slight from his timber land, he is obliged to reduce the area," and so the forest must go. Removal of tax from all timber land would, in a large degree, remove the necessity for cutting out the same on the cleared farms, as well as in the extensive forests.

Dague, Ohio.--The timber we employ in our business (cotton-wood, elm, and sycamore) will be used up in five years, or nearly so, in the State of Ohio. There should be legislation to prevent the wanton destruction of first-growth timber by the sawmill men. There are at least 40 sawmills in Paulding County.

Chicago, Ill.--Everybody seems to know that our forests and our resources in this line are nearly ruined already, but every one wishes only to enrich himself without regard to the future. We should have earnest legislation.

Grand Rapids, Mich.--The wholesale destruction of lumber should be counteracted, especially of hard-wood kinds, as it will take a long time to repair deficiencies by the growing of trees.

Dolgerville, N. Y.--In our State convict labor should be employed to make roads in the Adirondack region, a State forestry bureau should have stations all through the region to enforce forestry laws, of which the following are most needed: (1) Prevent the cutting of any trees less than 16 inches diameter at the butt; (2) Make stealing of logs or timber a criminal offense with severe punishment.

Ewing, Mass.--There should be practical legislation to replace the wholesale slaughter of timber throughout the country.

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CONSERVATION WEEK AT THE SESQUICENTENNIAL

The week of September 27 to October 2 has been designated by the Pennsylvania Sesquicentennial Commission as Conservation Week. A brief program will be given each day of the week in the Pennsylvania Building on the grounds, and visitors will be shown the various conservation exhibits. A representative of the Washington office will probably attend.

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CORRECT USE OF SIERRA NEVADA

By W. I. Hutchinson, D. 5

"Sierra" is spanish for "saw," therefore for "a sawtoothed mountain range." "Nevada" means "snowy." Hence "Sierra Nevada" means "Snowy Mountain Range." There is but one Sierra Nevada in California. Therefore "Sierra Nevadas," or "Sierras" is illogical and incorrect. The proper term is "the Sierra Nevada," or "the Sierra." It is also unnecessary to add the word "mountains," because "Sierra" carries that significance.

The same reasoning applies to "High Sierra," correct only in the singular form. It ought to be remembered, too, that the term "High Sierra" applies only to the lofty crest of the range from the Yosemite region to Mt. Whitney. And the Sierra Nevada itself properly covers less than the popular idea of the range. The Sierra Nevada, according to the best data we are able to find in Geological Survey publications, comes to an end in the mountain range a little south of Susanville with the North Fork of the Feather River as the last large drainage, and its place is taken northward by the southern extension of the volcanic Cascade range. Lassen Peak and Mount Shasta are in no sense a part of the Sierra.

SIERRA OR SIERRAS?

By Will C. Barnes.

The item submitted by Asst. Dist. Forester Hutchinson regarding the proper use of the words Sierra Nevada has been read with interest.

The United States Geographic Board has wrestled with this problem of plural endings for many years, case after case having been brought before it for decision. Niagara Falls, with its two separate falls American and Horseshoe is plural, but how about the separate units? Similar cases are Yosemite Falls, Nevada Falls, Yellowstone Falls, Blue Mountains, "The" Los Angeles, Ojo Caliente Hot Springs, The Rio Grande River, Picacho Mountain ("Picacho" meaning a peak in Spanish), and many others, some of which, have been referred to the Board, which has given it up and decided to take no action on the plural endings, feeling that the public will go on using them no matter what rule the Board might publish.

The Adirondacks, according to the older existing maps were originally the Adironack; the Blue Mountains of Virginia according to Daniel Boone and several surveyors who mapped that country were originally called the Blue Mountain. All the old maps we could find used the singular of the name.

A rather hasty review of the works of prominent writers indicates that John Muir is practically the only one who consistently and continually used "the Sierra" in speaking of the region. "The Sierra is about 500 miles long", he writes ("The Mountains of California"), and his book "My Summer in the Sierra" uses the singular always. Others, however, like Professor Holden, Professor LeConte, James Bryce, and many writers in the bulletins of the Sierra Club, almost always say "the Sierras" when speaking of the range.

Every encyclopedia and dictionary consulted and several California State histories use both forms, but more often in the plural; the term "High Sierras" being almost universally used.

The District 5 argument is sound from the basis of the Spanish as "she should be spoke." Nevertheless the fact remains that it seems almost absurd to speak of a range of mountains several hundred miles long with perhaps thirty or forty prominent peaks in its make-up, as a single unit or one mountain. The "Sierra Nevada Range" is quite proper whether Spanish or English is used; but to say that it is wrong to speak of the "High Sierras", or even the "Sierras", appears to me as being illogical.

A bright and shining illustration of the difficulty of changing common usage in this respect is found in our own effort to do away with the words "Fire Hazard."

When at New Haven a few years ago I commented on a sign on one of the entrances to Yale that said "Drive Slow". I joked with a professor of English literature there about it. Laughing, he said "Drive Slow is as firmly fixed in our grammar today as if Lindley Murray had put it into his own book half a century ago". Public and common usage has justified it, and in the final analysis the same authority will continue to dominate such matters.

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FINES FOR FIRE FUND

State Forester Pratt has advised District 5 that under the ruling of the Attorney General of the State all funds imposed for violations of the State fire laws will be deposited to the credit of the State fire prevention fund.

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CHARACTERISTICS OF LIGHTNING STORMS

(D-1 STUDY)

Records for 1924 and 1925 show that in the average lightning storm in D-1, it usually rains for about 11 minutes before the lightning begins to strike and about 34 minutes after the lightning has ceased. There is a slight difference in this respect between those storms which start fires and those which do not. About 700 observations of fire starting storms show an average of 9 minutes rain ahead of the lightning and 30 minutes following it, or a total of 39 minutes. The averages of about 1100 reports on non-fire starting storms show 12 minutes of rain before, and 38 minutes following, or a total of 50 minutes rain, excluding the duration of the lightning. For the District as a whole for these two years, safe storms had an average of 50 minutes of rain before and after the lightning and dangerous storms which set fires, had an average of 39 minutes of rainfall before and after the lightning. It is also worth noting that the reports for 1924 show a total of 53 minutes rain before and after the average storm, and in this year they had 691 lightning fires, while in 1925 the same time for rain was 41 minutes, increasing the number of lightning fires to 1242.

District 1's study shows that during the past 18 years 39 per cent of their fires were started by lightning. The number of lightning fires, however, varies considerably by years, and in 1924 51% were lightning, and in 1925 80% were lightning. The study shows a considerable variation for different storms in the amount of lightning that strikes the ground. It is figured that from 30% to 43% of the total flashes of lightning actually reach the groud. The balance remains in the clouds. This study shows also that for 1924 and 1925 59% of the lightning storms over the forests were considered as safe storms, starting few or no fires, while 41% were dangerous storms starting a considerable number of fires.

The District 1 study indicates that the elasped time between the sighting of the lightning storm and the discovery of the first four fires which result from the storm gives us a warning of five hours for 49% of the cases; 10 hours for 33%; 15 hours for 23%; 20 hours for 17%; 25 hours for 14%; 30 hours for 13%; and 35 hours for 12%.

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BE SURE IT'S DEAD

A rattlesnake's head severed from its body almost brought death to La Verne Tunnell, 20 year old son of Fred Tunnell of Santa Maria. Only the quick work of the father who cut into the boy's hand where the snake had buried its fangs and the immediate application of permanganate of potash, a supply of which the Tunnells had carried along on the hunting trip, saved the boy's life.

The party of three started from Figueroa Mountain for a deer hunt back of the Manzano and the first afternoon shot a rattler as they were riding along the trail. The snake had been cut in two, 6 inches back of the head. The boy alighted from his horse and had cut off the rattles when the head of the snake leaped at him and buried its fangs between his fingers. - D. 5.

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POISONING TREES

An interesting experiment in connection with the poisoning of trees to remove those species of low value that were interfering with the growth of the more valuable species has been made by the Malvern Lumber Company of Perla, Arkansas.

The trees poisoned consisted of several species of oak, black gum, sweet gum, red maple, ironwood, hop-hornbeam, persimmon, and various other hardwoods. The posion used is an arsenical compound called Bo-Ko Tree and Grass Poison and is made by the Bo-Ko Chemical Company of Jonestown, Mississippi.

As a check on the experiment several trees were ringed and the poison applied. Holes were also bored in several trees at about breast height and small amounts of the poison applied. All trees poisoned, following a slight girdling nearly through the cambium, died; trees girdled and no poison applied are still living; trees bored and poisoned show only a slight effect of the poison.

The company feels that the experiment was entirely successful, reasonable in cost, and an ideal method for removing undesirable trees after improvement cutting in the woods.

LIKES IT

A well-known extension forester in the East says of our Sesquicentennial Exhibit:

"I want to take this opportunity to express my intense admiration for the Forest Service exhibit at the Sesquicentennial in Philadelphia. I think I stood in front of it for half an hour just bursting with pride at being a forester. It is far in a way the most perfect exhibit of its kind that I have ever seen. Every detail is there and I can visualize the tremendous amount of work and money that went into its creation. For the benefit of those unfortunate enough not to be able to see it in its setting there on the grounds, I certainly hope that some excellent pictures of it may be taken to be published in American Forests and Forest Life, or better still, that the exhibit may be given a permanent place in the new U. S. Department of Agriculture building at Washington.

"The Forest Service is keeping well abreast of the very best that the commercial advertisers can do when they present to the public such a masterly picture as that of the forests of the past before and after the lumbermen have done their work."

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MACHINERY ON FIRES

After reading in a bulletin about the demonstrated practical use of tractors and blades for the high speed contruction of fire lines, the District Forester asked what was being done in this District to obtain greater use of machinery in fire suppression work. The latest answer to this question is given in the following excerpt from the Fire Guide:

"As in road construction and in similar arts, hand work has been followed by the development of machinery to do the same work quicker, better, and cheaper. This stage is due in fire suppression and the use of plows, road machines, torches and such equipment, which, due to its proven worth on fires is now beyond the experimental period, should become common practice. Too much dependence, moreover, should not be placed on ranch and project outfits being available, but as soon as a Forest has tried out and found its timber types and cover susceptible to other than hand tools, the necessary machinery should be stocked at Rangers' and Forest quarters."

Although it is known that a hundred or so of the back pack hand pumps have been bought within the last year or so, there is still some question as to how far the above quoted policy has been met but, with the catch-up which has recently been made in the supply of other tools, the purchase of machinery should soon be possible - financially. Plows, the light hillside reversible Oliver, which can be dragged with car or horse power, can be used on many districts. It may also be that as the ranges come back, there will be districts on which it will pay to have tractors with line making knives. What is wanted is to make a start along this line and to encourage the use of something besides the old and tried but slow methods. What do you think of the army officer's suggestion on the San Gabriel fire two years ago to shoot a fire line through the brush? !! - District 3.

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FAST SPREADING FOREST FIRES

By H. T. Gisborne, D-1.

On the Quartz Creek fire on the Kaniksu Forest, one example was seen of what is believed to be an extremely rapid spread of forest fire. A small curl of smoke was observed, issuing from beneath a papery rotten stick about six inches in diameter 150 feet ahead of the main line. This was a spot fire which, because it lay within the fire line, was watched to determine the period of time required for it to spread. The observer settled himself for a fairly long wait. In exactly four minutes, however, this spot which when first seen was about the size of a silver quarter, had burst into flame, spread to pine grass, run to duff and branch wood beneath dense fir reproduction, and had crowned. A fire which could have been pinched out with two fingers when first seen, could not have been stopped four minutes later by ten men.

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RECREATION, "THE OUTLAW".

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Roy Boothe, Inyo

If my conception of the Service policy of administration is correct, practically all other resources and activities rank higher than recreational use. As a general policy I agree, but believe there are ranger districts and Forests where recreation is the primary resource, and as such is entitled to somewhat more consideration than it has been getting.

As an example, it is decided to get out a map folder for a certain Forest. We all know that the primary purpose of the map folder is to supply a demand from the recreation-seeking public. Probably 95% of the edition will be distributed to people who want to use them in connection with their summer vacation on that Forest. We are cautioned, however, against stressing the recreational features in the descriptive write-up and illustrations. On most Forests, timber, grazing, and perhaps water power all rank higher in importance than recreation, and we clutter up the folder with a lot of statistics and information that may be read by 15 or 20 percent of the users of the maps. It is my impression that while timber may be the important resource from a Service standpoint, and of a vast material value to the public at large, the fact remains that the class of people who will use these maps are primarily interested in the recreational features of the Forest and will appreciate information and photographs descriptive of that subject. A very brief description of the other activities will be of educational value and probably read by most of the users of the maps. - D-5.

Take the public camp ground situation. We weep and wail at the presence of tin cans and other filth left by the campers, but allotments for construction of absolutely necessary sanitation improvements and means of eliminating these conditions are entirely inadequate to provide them, and we must depend on contribution from small local towns and organizations to provide most of these improvements. I feel that we must recognize and accept our responsibility to the extent of providing proper improvements and supervision of our camp grounds. This means increased appropriations. Congress must be apprised of the necessity. The camping public is not organized, and unless some one assumes the responsibility of getting an organized expression from them, setting forth the need for such improvements, we can expect nothing more than occasional spasmodic efforts, from that direction.

I believe we must make careful surveys of the actual use being made of our important recreational areas so that we can support our estimates for necessary improvements and supervision by actual figures of the number of people to be benefited.

Surely if we fail to provide these most important and necessary measures of protection, our administration is going to be compared with that of the Park Service and no one will be envious of our position.

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OUR GAME BIRDS

"The Bob White is the enemy of 145 species of injurious insects, including cutworms. He is described by scientists as the 'most marvelous engine of destruction for the smaller pests of the farms, ever put into flesh and blood.'

"Why destroy him? Just for the thrill of a kill? As a sportsman, is it not an act of sportsmanship to conserve this really worth-while bird? THINK IT OVER! then encourage the enactment of laws which will encourage the propagation rather than the extinction of this valuable species. Only this past winter, a marked scarcity of quail was reported from sections of the South where, heretofore, they had been plentiful.

Long open seasons and 'game hogs' are undoubtedly responsible for the scarcity." Clipped by E. W. K., D. 7.

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DR. SCHENCK WRITES

The following is an extract from a recent letter from Dr. Schenck: "I have had a glorious time traversing the woods of a dozen European states in the good company of leading American foresters, among them J. D. Guthrie. The American bunch was received royally wheresoever we went. While we cannot transfer bodily to the United States any European forestry nor any European forest experiments, European travel is in my opinion absolutely necessary for the development of American forestry in science as well as in practice. In the last analysis Europe has given us a lot of vision. 'Where there is no vision, the people perish.' That sentence is carved into the marble wall of the Congressional Library and is applicable, it seems to me, to nothing more than it is to forestry.

"I return to the U. S. A. in the fall of the year for lecture studies, and I hope for a chance to visit Washington.

"Should there be a good crop of western forest tree seeds this summer and fall, all European experiment stations will be, I am sure, deeply grateful if you will supply them with seeds from specified localities; in each case, a few grains will do. The forest experiment stations of America can do as much by these simple means for international amity amongst foresters as do the millions of the International Board of Education, toward the same end." - District 7.

Service Bulletin

U.S. FOREST SERVICE

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PLANTING VERSUS THE AX

By W. W. Grogan, Sierra.

In the February 22 issue of the Service Bulletin, Mr. Munger states that we should teach the public that reforestation is not to be accomplished by planting but by managing the cut so that nature can reproduce the stand. Certainly this is Forestry, and is the practice to which we must come in our virgin stands where the selection system is practical. But what of the millions of acres on which the ax has been used, without management, or in plain words "without brains", on which all the young growth, and source of seed, has been destroyed by repeated fires? Are we to let down on planting talk, when we have so many of these vast areas on all sides? These lands are good for no other crop than timber, but in that they have a high value. However, the majority of the owners have not been educated to the idea of restocking them for profit. On these areas, it is too late for the ax talk.

By all means, in the virgin stands, we must promote the "ax" method of reforestation, and instill it into the public mind to perpetuate these stands, and in their turn the plantations which we hope to see established on the above mentioned logged-off lands. But first, these lands must be planted, and it is going to take an awful lot of persuasion to do it.

Even with this accomplished, if we hope to establish intensive practice of Forestry, the nursery and planting will always have their place, to fill in and completely stock the ground, in those spots where accidents are bound to destroy the source of reproduction. Of course, this practice is a long way off, but we are going to have lots of planting talk if we ever hope to see it come to pass.

In the Douglas Fir region of the northwest, where the clear cut system is the most practical, planting is the most economical and safe method of reforestation. It is true that many stands of second growth have established themselves from the seed in the duff, but thousands of acres of this reproduction have been destroyed by fire, due to the leaving of unburned slash. If one seed tree per acre is left, having a value of from $20 to $30 on the stump, it has cost the lumberman that much for reforestation, and he is not sure of a fully stocked stand. This land can be artificially reforested for $10 per acre. Would it not seem logical then, in this region, to talk "cut clean, burn clean, and plant"?

It seems that teaching the lumberman to reforest with the ax, on stands now existing, is more simple than to get wasting logged-off areas to work again, because the latter demands public sentiment to bring it about. In our Pine regions, management of cut is the big problem with the lumberman, but this should not detract us from keeping public sentiment aroused to the need of planting, if we ever hope to see the many denuded areas reclaimed.

"I MISS MY SWISS"

By John D. Guthrie, in District 6 Bulletin.

To dispose quickly of the above title, I will say that only once during our stay of six days in Switzerland were we served cheese, and then only on specific request, and it wasn't the "holey" kind either. They said all the cheese was sent to America to make sandwiches out of - as an Englishman told us at Rome that it was very difficult any more to get good Scotch whiskey in England - it was all being shipped to America!

However, this isn't to be a discourse on Swiss sandwiches or Scotch highballs.

The sound sense of the Swiss people is evident in everything everywhere in their wonderfully interesting and beautiful country. They haven't many natural resources other than their forests, water power, and scenery. Really, Switzerland's greatest assets are the indomitable perserverance and resourcefulness of her people.

There is considerably more valley or farming land in Switzerland than I had believed. Her mountains, however, are certainly rugged and upstanding, and it is marvelous how trees do grow on the almost perpendicular slopes. But for the fact that the Swiss have been careful to keep forests growing on these steep mountain sides through centuries, the rough, rock surfaces would now be bare, whereas they are not only covered with commercial forests but there is a thick humus and a rich forest soil. Verily, Switzerland's forests hold her mountains up and her taxes down.

We were treated splendidly by Swiss foresters, who were most cordial and obliging. In fact, one of the high spots in entertainment of the entire European trip took place in a Swiss forest. One day, after going through a fine forest for several hours, (there were some 18 of us Americans), as we turned an angle in the trail, here came down a side-trail a sort of push-cart, wheeled by two forest rangers, in uniform of course. But what was in the cart immediately interested us. Well, it was loaded with sandwiches, cigarettes, cigars, beer, and CHAMPAGNE! And the afternoon had been warm, the walk rather strenuous, - so we rested, for awhile. We Americans decided that this was a nice little custom which should be introduced into our forests!

The outstanding things in Swiss forestry to me are the care and real thought given by the LOCAL forest officers to their forests, their real forestry knowledge, the great difficulties of transportation of wood products from the high mountain forests, and the complete utilization seen everywhere.

We waded through 8 inches of new snow in the forests on the heights above Interlaken, and again near Thun. We saw many cableways for getting logs out of what we would call absolutely inaccessible places, cable-ways designed, installed, and being operated by forest officers. The foresters were selling this material delivered at the road side or railroad in the valley; otherwise, they could not dispose of it. We saw many nurseries, all small, all in the forest, and while perhaps not as well cared for as ours, were nevertheless furnishing seedlings when needed and at a very low cost. Some of these nurseries were high up in the mountains and in order to have a supply of manure for keeping up the soil of the seed beds, there was at least one stable at each nursery. Here a few cows were allowed to be kept by some farmer during the summer in order to accumulate a supply of compost. The cows are kept in the barns and fed on green hay cut in small meadows nearby.

We saw many cattle and milk goats in the small alpine pastures, or on wet meadows. The Swiss seem to have figured out a nice balance between livestock and forests. The farmers and mountaineers MUST have livestock for milk, butter and cheese, for there is little or no agricultural land (other than hay land) in the higher mountains. So, land which will not erode, or is too wet for tree growth, is grazed. All this has come about through the common sense of the Swiss people themselves. They know the value of forests and also that they must have pasture lands for butter and cheese production. Wild flowers! Oh, yes, beautiful ones, - and many were being eaten by cattle and goats, many were being cut for forage. No one seemed to get excited over it, not even the American tourists. Excitement or silly sentimentality would get nowhere with the Swiss--they know their problems, and they know what they are doing. They don't destroy their forests, neither their wild flowers, their mountain sides, nor their streams; but they are using them all, sensibly and with rare good judgment. In Switzerland the prosperity of the forest is intimately interwoven with the prosperity of the people.

Of course, we saw and went through and were given figures about the famous Sihwald, the City forest of Zurich. We saw other city forests as well, where they seem to have solved the problems of dual use of such tracts, combining the city park with a commercially managed forest. Rustic shelters, rustic seats, more and better roads and trails, more signboards, were in evidence in such cases, but the forest was being managed for profit and everyone seems satisfied.

PICTURES GOOD AND BAD

By C. G. Bates, Rocky Mt. Exp. Station.

In the Service Bulletin of July 26 Shipp makes what seems to me an unjust criticism of the small kodak, in comparing the average quality of our photographic work to-day with that of 25 years ago. In my opinion the quality or kind of cameras being used has practically nothing to do with it. This opinion is based on the examination of a great many private photographs besides those I have made myself. I have seen collections made entirely with small box kodaks, entirely lacking in fine adjustments, "fool-proof" in every respect, and never used with a tripod, - such collections often present a far more pleasing appearance than the general run of more expensive pictures such as are represented in the Service Collection. From this one might deduce that the "snap-shot photographer" (many of us, in our haste, are inclined to be just this) would be better off with such a fool-proof outfit than with a more expensive one. Such a deduction is not warranted. But one can say this: an eye for artistic values, a "knack" at seeing and taking good pictures, is a far more important item than an expensive outfit.

The real trouble with the Service Collection of photographs, in my belief, is the utilitarian spirit which actuates the taking of most of our pictures. They are largely made to "illustrate a phase of our work", they are largely taken in the course of the day's work, under the pressure which too often is exerted during field trips. We make our daily schedules without time allowance for pictures, and the pictures suffer as any "side-line" usually suffers. But perhaps the trouble is even a little deeper than this: the very fact that we are so intensely utilitarian would warn one that most of us, at least, lack a sense of artistic values. May I be pardoned for citing my own experience in evidence, if not proof, of this point.

Since 1912, when I purchased a 3-A Ansco folding "kodak", I have taken some 1600 official pictures and a good many others, with this equipment and with a Century 5 x 7 camera having the finest of Zeiss lenses. I trust that no one in the Service has a lower batting-average for GOOD pictures than I. The Century product undoubtedly averages the better quality, because the taking of any picture with this outfit suggests, if it does not require, more careful preparation. On the other hand, the kodak product is fully as good when any adequate preparation is made. Snap-shots with this kodak are rarely satisfactory. I rarely expose less than ½ second where the result is of any importance for record purposes, and this, of course, implies using a rest if not a tripod. I fully agree that the tripod should always be available.

So much for the equipment, which, as I have said, is relatively unimportant. Now, as to the spirit or MOTIVE of the pictures. Most of mine are made for record and are flat and uninteresting to anyone not acquainted with the work. Only occasionally does the artistic spirit seize me, and since this has never been systematically developed, I shall make no boast as to the consequences. But I can point to a few good pictures, conceived primarily in artistic enthusiasm, which are "encouraging" at least. A little conscious attention to "composition" occasionally works marvels. Personally I find that I must learn to use ray-screens in order to get distant views, cloud effects, etc., which are often so appealing to the eye and so disappointing in the ordinary photograph.

To bring out my point of controversy with Shipp, I can sum up as follows: the current Service photographs are not suffering from the lack of adequate equipment so much as lack of time or willingness to study the subjects, untrained senses of artistic values, a change from the sentimental enthusiasm which so strongly pervaded the work of our earliest foresters. All of us can doubtless do better than we are doing, but to compete with the photographers whose work mainly holds the public eye these days, we shall probably have to have specialists to "write" our visual stories. If one among us is fortunately endowed with the abilities required to be a good photographer, he very likely will not be the "all-around, practical man" required to do our routine work. But I would say that an instructional course in photography would yield at least as high returns as many of the courses being offered Forest officers, considering the importance of pictures in our public relations and our internal education. On the other hand, allowance must always be made for the fact tha in obtaining records of great importance pictures largely lacking in attractiveness must often be made.

"STONE WALLS DO NOT A PRISON MAKE, NOR IRON BARS A CAGE."

Have been having quite an argument between our "buttermilk permittees" and a party who is pasturing a number of dairy cattle in the Wm. Wells field on that range. It seems the Jersey heifers are vamping our permittees' bulls, and the two-wire fence is not an effectual barrier. We have requested an opinion from Mr. Dechant as to what the State law defines as a legal fence, but don't see how that is going to help much, as no bull will likely respect the legality of the fence with a sleek bunch of Jersey flappers on the inside. As a temporary expedient, we have given the permittees permission to remove their bulls, which they were willing to do. - Inyo.

MORE MONEY FROM LAMBS

By P. B. Lister, D-2

Nine pounds increase in weight of lambs may be added without additional expense by the adoption of the open herding and bedding out system for handling of sheep on the summer mountain ranges. If lambs sell for 12¢ in the fall, the nine pounds increase in the weight of your lambs by being handled under the open herding and bedding out system will mean an added income of $1.08 on each lamb shipped in the fall. If this system were adopted for only one-half of the 200,000 sheep going to the mountain ranges from the San Luis Valley next summer, the increased income for the Valley, with a 70% lamb crop, would be $140,000.

Actual tests, comparing the open herding and bedding out system, or bedding one night in a place, with using the same bed ground for irregular periods have been tried out on many Forests. Generally, the plan followed was to select and weigh a representative number of lambs on entering and leaving the forest in two different bands of as near the same breed, size and condition of health as possible. One band was handled in accordance with this improved system and the other in accordance with the use of the established bedground. Some results from National Forests on the eastern slope of the Continental Divide from Montana to New Mexico are as follows:

	Daily Gain in Wt. of Lambs			
	Bedded out	Esta. B. G.	Diff.	Amount to in 3 mo.
Beartooth, Montana	.44	.32	.12	10.8
Helena "	.435	.33	.09	8.1
Madison "	.50	.38	.12	10.8
Bighorn Wyoming	.52	.41	.11	9.9
Medicine Bow "	.46	.39	.07	6.3
Rio Grande, Colorado				8.0
Average				9.0

The lambs on the Rio Grande National Forest were from ewes owned by the same man and all lambed together, the grazing utilized before going to the forest was the same, and everything in general being the same before going to the summer range. One bunch was open herded and bedded out while the other was close herded. The lambs were weighed separately and showed the difference of 8 pounds in favor of the lambs from the bunch open herded and bedded out.

The reason for this increase in weight of lambs was due largely to a few simple differences in management. The sheep that used a bed ground for one night only were on fresh feed all the time, while those handled from an established bed ground were in camp or were being drifted out over territory previously fouled by grazing and trampling before they could reach the fresh feed. In the evening, when the sheep were drifting in over this previously used territory, the bedded out sheep were doing their best grazing and drifting to the top of a ridge to bed down for the night.

OUR BIG STOCKMEN PERMITTEES

By Will C. Barnes, Washington

Not long ago one of the Congressional investigative committees asked the Forester for information as to the largest grazing permits issued by the Service. We gave them the figures from memory and then asked the Districts for definite information. Here are the highest figures for each District for the season of 1925:

D-1:	Cattle	Pointdexter & Orr Livestock Co., Dillon, Mont. Permit for 2095 cattle, Madison Forest.
	Sheep	Dobbin & Huffman, Lewiston, Idaho. Permit temporary, for 12,000 sheep, Clearwater and Selway Forests.
D-2:	Cattle	J. L. Driskill, Spearfish, S.D. 2750 cattle, Black Hills Forest.
	Sheep	Colorado Land & Livestock Co., Hartsel, Colo. 20,000 sheep, Leadville Forest.
D-3:	Cattle	G. O. S. Cattle Co., Silver City, N. M. 6819 cattle, Gila Forest.
	Sheep	Ed. M. Otero, Las Lunas, New Mexico. 18,500 sheep, Datil Forest.
D-4:	Cattle	Indian Creek Cattle Pool, Moab, Utah. 4185 cattle, La Sal Forest.
	Sheep	Wood Livestock Co., Spencer, Idaho. 56,000 sheep, Targhee Forest. This company also holds preference for 3400 cattle on Targhee and Lemhi Forests.
D-5:	Cattle	W. J. & P. S. Dorris, Alturas, California. 2560 cattle, Modoc Forest.
	Sheep	Cone & Ward Co., Los Molinos, California. 7230 sheep, Lassen Forest.
D-6:	Cattle	Pacific Live Stock Co., Burns, Oregon. 2100 cattle, Malheur Forest.
	Sheep	Smythe Bros., Pendleton, Oregon. 12,900 sheep, Whitman and Umatilla Forests.

D-7: Cattle A. S. Hart, Crestview, Florida. 540 cattle, Florida Forest.
Sheep Mrs. Emma S. Hughes, Florala, Florida. 1197 sheep, Florida Forest.

The G. O. S. Cattle Company on the Gila with a permit for 6819 cattle and the Wood Livestock Company on the Targhee with 56,000 sheep are the two largest.

On the Humbolt Forest in District 4 there are four sheep permittees with an average of 21,500 sheep to each permit. On the Payette in the same District there are two, with an average of 29,000 to each permit.

PLANT, PLANT, PLANT, PLANT

By E. E. Carter, Washington

The annual planting reports from Districts having this activity are evidence that the Service is moving toward some of its objectives. Jobs are being finished. The season of 1926 sees the main portion of the burn on the South Fork of Lewis River, Columbia Forest, once more a timber-growing area. It sees the last of the large-scale planting on the Tawas Division of the Michigan, at least until purchases under the Clarke-McNary Act are possible, with about 12,000 acres transformed from barren sand plains to a timber-producing farm. The end of the job on the Minnesota Forest is definitely in sight a few years ahead. To many men in the Service, these looked like jobs of indefinite extent when they were started.

Tackling any of our big planting jobs is like climbing a mountain. The top is lost to view. The going is apt to be tough in spots, and sometimes elevation is lost by mistakes in the path chosen. Sometimes the ground is loose and the climber slips back a foot for every two he climbs. Keeping at it doggedly, however, brings the end of the climb in sight, sometimes with surprising suddenness and at a still more surprising nearness.

One mountain conquered some years ago was Mt. Hebo in Oregon. Its sides are growing Douglas fir once more after a half century of uselessness. On others, such as the Halsey Division of the Nebraska and the range on the east side of the Pike, the top is not yet in sight and the going is rough at times. Water is scarce. But the men on them can take heart. The job has an end, and reaching it is both possible and worth while.

NOT WHOLLY MERCENARY

L. F. Kneipp, Washington

Lew Barrett, the genial Chief of Lands in D-5 overlooks no opportunity to lift the special-use receipts toward the quarter-million mark which seems to be his financial objective for that line of work, but this laudable ambition has in no way abated his keen interest in the promotion of free or cost of operation municipal and county camps on National Forest lands. Among the free permits reported by the District for the last fiscal year is one on the Angeles Forest issued to the Los Angeles County Board of Supervisors for an open-air camp for undernourished children under the direction of the Los Angeles Tuberculosis Association. On the Cleveland Forest is another issued to Orange County for a children's open-air health camp which is maintained by the County. On the Eldorado Forest one term permit authorizes the city of Sacramento to maintain a municipal camp, one annual permit authorizes the city of Sacramento to maintain another municipal camp, one annual permit authorizes the city of Berkeley to maintain a municipal camp and another authorizes the city of Stockton to maintain a municipal camp. On the Inyo the city of Los Angeles maintains the Los Angeles High Sierra Camp as a municipal camp. On the San Bernardino the county of Riverside has a permit for a municipal campground. The Sierra has a municipal recreation camp and also allows the Southern California Edison Company ground upon which to maintain a club house for its employees. On the Stanislaus Forest municipal recreation camps are maintained by the cities of Berkeley and Oakland. Whenever a municipality or county shows the slightest preliminary symptom of an inclination to establish a free municipal camp or one on the cost of operation basis, Barrett is hot on its trail with an offer to permit the free selection of the choicest of the available National Forest recreation areas. The mutual good will and better understanding which results from this form of development far transcends in value the few hundred dollars which might otherwise be derived through the rental of the lands occupied.

WATERPROOFING OLD TENTS

The bulletin has carried suggestions several times in the past how to inject new life into old tents that would serve better as water sieves than shelters. We've just tried the "Burch Bark" waterproof dope on a three year old canvas auto top - you know the kind that came out several years ago on Buicks, Maxwells, and several other high powered cars - a top that for a year past let the owner in for a complete saturation even in a heavy mist. Shortly after doping this top the car stood for two hours in a cloud burst up to Bob Hughes' road camp on the James and the inside was so dry after the ordeal that one could have scratched a match on the under side of the canvas and got results. We don't get any commission on sales of this stuff but since tentage is now full price - no war canvas left - and forests must pay for their new tents, a couple of dollars worth of this dope may stave off the fatal day when twenty dollars or more must be dug up for a new wall tent. The F. J. Burch Mfg. Co., Pueblo, Colorado, makes the Burch Bark solution which comes khaki or plain at a cost of $1.30 a gallon at Pueblo.-District 3.

CLIMATIC AND SOCIAL INFLUENCE OF FORESTS.

By George B. Sudworth, Washington

The following comment on the value and relationship of forests to human society is made by A. F. Tigerstedt of Mustila, Finland, who contributes a chapter in English in Volume 24, of the publications of the Society of Forestry in Finland:

"From many points of view, however, the subject is really worth more attention than has been bestowed upon it hitherto. It is decidedly in the interest of the whole civilized world to preserve a huge belt of forest-clad ground round the frozen regions of the North Pole, and it is the author's conviction that if the Northern forests should once be destroyed through war, revolution or bad management, the climate of the temperate zone would be disastrously affected and the whole fate of humanity altered.

"In this respect, Finland stands as a privileged guardian and holds an honorable trust against barbarity and destruction. It is, furthermore, the author's earnest wish, when once this book is published, to create in all its readers a realization of the absolute necessity of re-afforestation. The history of civilization shows that where forests exist, there will also civilization exist, but when the forests disappear then the population gathers in cities, and decline and decay are imminent.

"May the human race now begin, in earnest to follow and continue Nature's aim.

"May not only the Northern regions be covered with fine and valuable forests, but also the Southern ones as well. May the bare-stripped mountains of Italy, Greece, Asia Minor, Algeria, Spain, the mountains of China and many other places, especially and exculsively suitable for forest growth, may they all be re-afforested, before the human race devours itself by internal and external struggles."

LOOKOUT TOWER

Nice, France, September 3 (AP).-A new plan to combat forest fires in southern France is to be started next year. Thousands of the practically unburnable Accario Decurens species of the mimosa tree will be planted in the forests to act as fire-breaks.

The plan consists of stretching lines of closely-set trees throughout the forests, with intersecting lines dividing all forest lands into comparatively small squares. Forestry experts contend that when the work is completed the danger from fire will be extremely slight.

The possibility of using living fire-breaks is one that needs investigation. The Southern Experiment Station has planted a strip of lespedeza grass (green most of the year) round a small experimental area containing about one section of land. At a State experiment station in Minnesota I saw blue grass used for a fire-break on one side of a plantation established many years ago by H. H. Chapman. Who knows of hardwood species used among pines for fire-breaks?

BUILDING LIMITATION

The comptroller has been asked to explain just what is meant by the expression "water supply and sanitation system" in Sec. 2 of the Act of March 3, 1925.

This is the Act which authorizes our building limitation of $1500; also gives authority to construct each fiscal year three buildings for National Forest purposes not to exceed $2500 each, and three not to exceed $2000 each. The Act provides that the cost of a water supply and sanitation system shall not be charged as a part of the cost of any building except those costing in excess of $2000 each and that no such water supply and sanitation system shall cost in excess of $500.

The Comptroller replies that the term "water supply and sanitation system" must be held to include all expenses for providing the means by which the buidlings may be furnished with water, and by which refuse such as sewage may be disposed of, and is not limited to the installation of plumbing in a building; therefore, the entire amount which may be expended in furnishing a building with water and finally disposing of sewage is limited to $500. This shall include the cost of a cesspool or septic tank if necessary for the disposal of sewage. District 4.

Service Bulletin

U.S. FOREST SERVICE

(Contents Confidential)

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SUPERIOR WILDERNESS.

Allen S. Peck, D. 2.

On September 3 at St. Paul, the Forester presided at a public meeting which should play an important part in the destinies of the Superior National Forest.

For some months past, there has been a great deal of agitation against the construction of roads in the Superior Forest. The opposition, as expressed in the resolutions passed by numerous Izaak Walton League clubs and other organizations, ranged all the way from protests against any roads except those needed for protection, to any or all roads for any purpose whatsoever. These protests have resulted in withholding action by the Secretary on the Forest Highway program for Minnesota for this year which provided for the extension of two stub roads lying to the northward of and serving the Forest. The Development Road program this year called for the continuation of construction work on the road traversing the western division of the Forest from the Supervisor's headquarters at Ely to Buyck near the western boundary. The development system also called for several stub roads. It was not, however, proposed to build these for a number of years owing to the lack of funds.

Because of the very general and, in fact, nation-wide interest which has been taken in the Superior Forest on account of the adaptability of a large part of it to canoe travel, and because there was evident misunderstanding of the plans of the Forest Service with regard to its administration, the Forester felt that nothing but a conference of those who had expressed an interest in the handling of the Forest would clear the air and, therefore, with the Secretary's approval, he called this meeting.

There were probably 100 people present, including members of the Izaak Walton League, officials of the Conservation Commission of the State of Minnesota, the State Highway Department, the Counties of Cook and Lake, a large part of the lands of which are included within the Superior Forest. It was in these two counties that the two sections of road north of the Forest were planned. The meeting lasted fully 6 hours and although several heated discussions were started, the chairman was entirely successful in preventing any casualties and the result was very satisfactory, in that the air was cleared of much misunderstanding and various points brought up by advocates of different policies were subjected to criticism and questioning in a way which made the main facts of the situation stand out in bold relief.

The plans for the management of the Superior, an important provision of which is the restriction against opening up by auto roads about 1,000 square miles of canoe territory, were explained to those assembled, and they were assured that it is the intention of the Forest Service to use auto transportation only where there are no water routes available to give the 6-hour fire control which it is felt necessary to have.

County officers painted vivid pictures of the importance of roads in the development of the interest of local property owners.

The Game Commissioner said that if roads were built and timber cut the game would all disappear. The Izaak Walton League and others who are interested in the Forest as a conoeing and fishing country advanced a number of arguments against Roads. The question as to whether the opening up of forested country by highways with consequent motor traffic was the cause of an increased number of fires was debated at length.

It was strongly asserted that the preservation of the Superior, and the country to the north of it in what is commonly called the "wilderness condition" would involve practically wiping out in time the two counties of Lake and Cook so far as income producing taxable property is concerned. It was also contended that such a course would involve a very much larger program of acquisition by the Federal Government than otherwise would be necessary. It was made clear by Forest Service representatives that the Service has no control of road building on the lands outside of the National Forests; and it was announced by the county representatives present that they were going through with the construction of the two roads in debate whether or not assisted by the Service.

An interesting point emphasized by the Forester was that it is the intention of the Service to harvest timber crops when warranted and there was no serious opposition to this policy expressed at the meeting.

It is very much hoped that, as a result of this meeting, those interested in the Superior Forest will be satisfied that the plans of the Service for handling this Forest are sound.

"DING'S" CARTOON

We reproduce by permission a striking cartoon by the famous "Ding," which graphically portrays one side of the wilderness controversy. The Bulletin hopes the anti-wild-lifers will come across with something equally good. W.S.

FIRE SEASON NEARING END IN D. No. 1

Heavy rains during the past ten days over all Forests in the western part of the District have practically put an end to the fire season. Crews are being reduced to the minimum necessary to patrol lines where fires have not been killed, and at the present there are not over 200 men on the fire lines. Overhead men from eastern Montana Forests and from other districts are being returned to their stations as quickly as camps can be disbanded and equipment returned to the warehouse.

DANGER NOT OVER IN D. No. 3

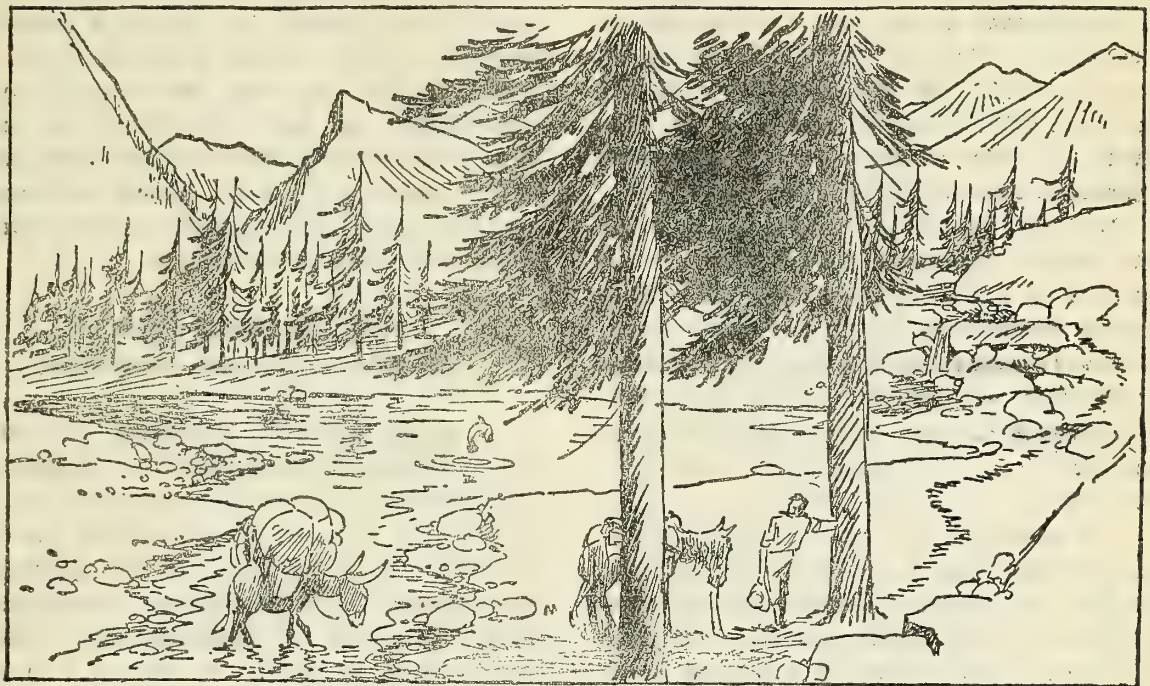
The fire season was declared officially closed last year with the receipt of the August 20-30 reports. We folded up our fire tools (those that could be folded up) and said a glad goodbye to the 1925 Fire Season and were happy to see her on her way. But this year she is still with us, keeping us constantly on edge. She seems to us just like a sleeping lioness - we don't know whether she will awake with a howl, a roar and ugly snarl, and make herself generally disagreeable and frightful. Most of the forests are dry, or drying out and danger is generally increasing at altogether too rapid a pace to be pleasing.

HATS OFF TO THE GOBS!

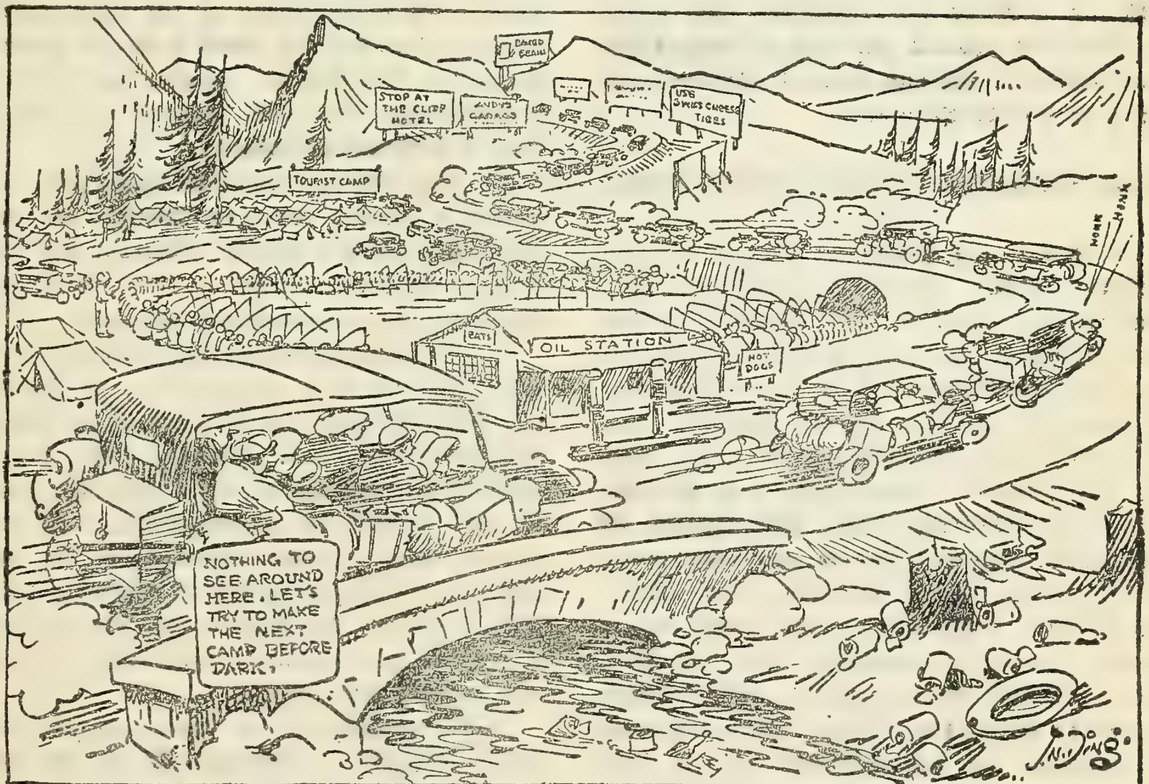
Jno. D. Guthrie, D. No. 6.

Would that the average land-lubber might learn about care with fire from our sailors! From July 6 to August 14, some 3000 men from the Pacific Battle Fleet then in Puget Sound waters visited the Olympic Forest. The men came in parties from 2 to 80, the average being 6 to a party. Most of the parties went in for 3 days, some for 10; these last usually went far inland. Rifles were not allowed, but a few revolvers, not over one to a party were carried. Each group was in charge of a sailor or petty officer. They all came through District Ranger Morgenroth's office at Port Angeles, where it was explained to the leader where to camp, where to build a fire, how to put it out, where to smoke, what the game laws were, etc. A camp-

The Advance of Civilization



ONCE THE DELICIOUS REWARD ONLY OF THE VENTURESOME AND RESOURCEFUL—


BAKED BEANS
STOP AT THE CLIFF HOTEL
ANDY'S GARAGE
USE SWISS CHEESE TIRES
TOURIST CAMP
HONK
HONK
EATS
OIL STATION
HOT DOGS
NOTHING TO SEE AROUND HERE. LET'S TRY TO MAKE THE NEXT CAMP BEFORE DARK.
J.N. Ding

NOW ANYONE MAY HAVE IT FOR A FEW GALLONS OF GASOLINE AND AN EYE FULL OF DUST.

(Copyright 1926, New York Tribune, Inc. Courtesy New York Herald, Tribune.)

fire permit was issued to the leader, who was told he would be held responsible for his party. At least 90 per cent of the 3000 were hikers with packs, and they seemed to get quite a thrill not only from being on land but in being in the big timber of the Olympics. They camped mostly along the Elwha River. Some of the officers patronized the numerous resorts of Crescent Lake.

Now, the really remarkable thing about it all is that the local forest officers had no trouble at all from these 3000 men. They conducted themselves in an orderly manner, they left no campfires burning, they started no fire from cigarettes, so far as known they respected the game laws. In a letter of appreciation to the Commander, District Forester Granger said in part:

"As compared with an equal number of civilians this record is to us remarkable. Would that our civilian visitors could likewise learn to hold public property in such high regard. Such a record makes us even prouder of the Navy. Please therefore, Sir, accept our sincere appreciation, and allow me to extend to you and such men an invitation to come again to see and enjoy their National Forests of the Northwest."

EUROPEAN SCIENTISTS VISITING NATIONAL PARKS.

Although the group of European plant scientists which recently assembled at Ithaca, N. Y., came to this section of the United States principally to see the National Parks, (Yellowstone and Rocky Mountain) they also learned something of the National Forests. They were encountered in Cody, Wyoming, by Supervisor Langworthy, Mrs. Hayden, the Shoshone literary star, and Douglas of the District Office, and an hour was spent in telling them of the wonders of the Shoshone Forest. Only one of the group was a forester, strictly speaking. He was M. Comte, a Swiss Oberforester. The others were mainly botanists, but as such displayed much interest in the subject of the tree species of the forests, especially their identity. M. Comte, through an interpreter, asked for the scientific name of each species and the uses made of them commercially. He also asked numerous questions regarding the organization of the Forest Service. His particular position in Switzerland corresponds very closely to that of a forest supervisor. It was unlike that position, however, in that he said the area under his supervision, as well as others, had in recent years been reduced to one-half its original size in order to create new administrative units and thereby accommodate the increasing crop of foresters.

FROM THE GROUND FLOOR UP

Lillian T. Conway, Washington

Among the many practical projects of Roy L. Hogue, State Forester of Mississippi, for carrying out the provisions of the forestry bill passed by the State Legislature last March is his plan for meeting its educational and publicity requirements. He has selected a woman ex-teacher and recent member of the U. S. Forest Service to cooperate with the Board of Education in a State-wide correlation of the study of Mississippi forests and woods with the many subjects in the school curriculum into which a knowledge of trees, forest products, and forest influences enters.

Mrs. Daisy Priscilla Edgerton, for 14 years a member of the Branch of Public Relations of the Forest Service, and before that a teacher in her native State, South Carolina, is to undertake the work.

Although Miss Caroline Dorman did somewhat similar work successfully in Louisiana the Mississippi plan will be an interesting experiment in State forestry. Mr. Hogue is himself a graduate of the School of Forestry at the University of Michigan, but he believes that a woman experienced in teaching and with a knowledge of forestry will be better fitted for presenting the subject to children than would a technical forester. His reasons are sound.

A forester is a technical and scientific expert. Forestry is a profession chosen by some graduates of the colleges and universities of the country. To put forestry into our graded schools is another matter. The study of the forest may begin with the primary grades in their nature study work, and be carried on in the geography and general science classes of the higher grades the manual training courses, the civics classes, and the history lessons. Graded school pupils, particularly the junior and senior high school students, learn the influences and material gifts of the forest, though not one out of a thousand such pupils will become a geographer or other scientist, a manufacturer of wooden products, a historian, or a civic leader.

It is not necessary for the child to know how many board feet a given piece of wood may contain, the diameter breasthigh of a given tree, or the definition of a technical term such as "stand" applies to timber. It is important, however, that every child should know that the paper, the desk, the pencil used by him so carelessly were once the wood fiber of growing trees, the daily discomfort that would be his were it not for the furniture in his home once the sturdy growth of the forest, and how the forest has helped to supply the cup of cold water his strenuous play or exercise demands.

It is one thing to pass a law and say to the people of a State - "Here it is; put it into practice." It is a very different thing to make clear why such a law should have been passed and why its provisions should be put into execution for the good of the State as a whole and of each one of its citizens.

The legislators and the first State Forester of Mississippi believe in beginning at the bottom and working up. In the present hazy state of knowledge of trees and woods and their uses and abuses, the best beginning is with the young child in the classroom of the well-informed teacher.

Mississippi is a recent recruit in the cause of wise forestry practices, although it ranks fourth in lumber production, thousands of people earn a living in its woods and lumber mills, a large proportion of its taxes come from the forest, and within its borders are great stretches of cut-over lands better suited to tree growing than to any other use. All this wealth and waste are matters of vital interest to every man, woman, and child in the State, and the best way to make them known is the way of all systematic education - from the ground floor up.

SECOND ANNUAL CONFERENCE OF FOREST SCHOOLS

No. 1

AUGUST 30 - SEPTEMBER 2, 1926.

Representatives of ten of the leading forestry schools of the country gathered at the U. S. Forest Products Laboratory, Madison, Wisconsin during the week of August 30 for the Second Annual Forest School Conference.

The purpose of the annual Madison conference of forest schools is to harmonize research on forest products as carried on by the Forest Service at the local laboratory and by the various schools of forestry and to promote the exchange of information between these agencies.

The time of the recent conference was given to detailed presentations and discussions of "Utilization Methods Employed by Industry to Use and Prevent Wood Waste." Officials of both the forest schools and the Forest Service lead discussions of their various specialities.

The following men were in attendance: Austin Cary, U. S. Forset Service; Robert Craig, Jr., University of Michigan; W. G. Edwards, Pennsylvania State College; G. A. Garratt, Yale University; O. H. Guise, Cornell University; R. W. Hayes, University of Louisiana; J. V. Hoffman, Pennsylvania State Forest School; Raymond Hoyle, New York State College of Forestry; T. Macklin, University of Wisconsin; Burr N. Prentice, Purdue University; J. H. Ramskill, University of Montana; Henry Schmitz, University of Minnesota; W. N. Sparhawk, U. S. Forest Service G. I. Stewart, University of Maine; Russell Watson of the Banzhaf and Watson firm of consulting foresters of Milwaukee.

At the conclusion of the conference, the appreciation of its members for the part which Director Carlile P. Winslow and the Laboratory staff had in preparing for and carrying on the conference so successfully was expressed in the following resolutions:

Whereas the Forest Products Laboratory has been instrumental in bringing about the second annual meeting of the Forest

Schools, and whereas the Laboratory has arranged the program and given freely of the time of those specializing in utilization in presenting the new developments to the conference and taking part in the discussions, and whereas all accommodations of the school representatives were arranged by the Laboratory staff, and whereas the Laboratory secured for the conference such excellent contacts with the developments in the chemical field as presented by Mr. Howard Weiss, in cooperative marketing as presented by Professor Theodore Macklin, and the relation of the turpentine industry to forestry practice by Mr. Austin Cary. Therefore be it resolved that the deepest appreciation and gratitude of the forest schools be extended to the Director, C. P. Winslow, for his personal interest and conduction of the conference as chairman. Be it further resolved to express our appreciation and indebtedness to all of the members of the Laboratory staff who assisted in the program and discussions and maintained the interest by their attendance. Be it further resolved that copies of these resolutions be placed in the hands of Col. W.B. Greeley and The Secretary of Agriculture.

Signature of School Representative.

FOREST SEED CROP

F. R. Johnson, D. 2.

Reports received from Supervisors indicate that the seed crop on the Forests is, for the most part, a failure this year. On the Minnesota Forest it was hoped that we could collect red pine seed for 15 States as a part of the Federal cooperation under Section 4 of the Clarke-McNary law and State Foresters had requested about 1500 pounds of seed. However, the red pine seed crop is almost a failure and little or no seed can be secured.

Engelmann spruce seed is needed for sowing at the Monument Nursery and a collection was desired from some forest where this species reaches its optimum development. A small crop of spruce has been reported in several places, but no Forest has yet volunteered to collect the 20 bushels which is desired for shipment to the Monument Nursery.

There is considerable demand for blue spruce and Douglas fir seed, and several Denver seed dealers have been advertising. This would make a source of revenue to local people in any place where cones are reported.

The yellow pine seed crop is a failure generally. The Nebraska Forest is undertaking a small collection of yellow pine cones from selected trees, which are free from disease and insects, for use in a study which is being conducted at Halsey to learn if the good qualities of certain trees are transmitted to their offspring. If this is proved conclusively, it may change the method of seed collection so that cones may be gathered from trees of desired form, growth, and vigor rather than from squirrel hordes.

SAN FRANCISCO PEAKS ROAD OPENED TO PUBLIC TRAVEL.

The road known as the San Francisco Mountain Scenic Boulevard Toll Road, construction of which has been under way for 10 years, has been completed to the Fremont Saddle between Fremont and Agassiz Peaks. This road, about 10 miles in length, leads off from the Flagstaff-Fort Valley road, follows a ridge, climbs the east side of Fremont, winds around the southern boundaries of that peak, and switches back between Fremont and Agassiz to the Saddle, where it crosses into the so-called Interior Basin. Contract will be let at once for construction of about 2 miles around the north or interior slopes of Agassiz to the Doyle Saddle between Mt. Agassiz and Mt. Humphreys, with the ultimate goal the top of Mt. Humphreys with an elevation of 12,611 feet. The road, which has been constructed through the efforts of Mr. J. W. Weatherford of Flagstaff, is a 14-foot road with grades seldom exceeding 8 per cent for short distances, affords a marvelous view of the country around the peaks, and should be of great value not only to the Forest Service and the City of Flagstaff, but to the State of Arizona. It is hoped that it will prove a financial success, and through the development of camp grounds, the possible construction of hotels, and the operation of bus service become nationally famous. Pending complete construction, a toll of $1 per person will be charged to Fremont Saddle. - D.3.

CONSERVATION

(Extract from the report of the Board of Director's Meeting of the California Development Association held at Del Monte, Calif., August 9, 1926)

The report submitted for Chairman Paul Shoup of the Conservation Committee showed that the Conservation Department of the Association has been responsible for the organization of sixty-two volunteer suppression organizations this year. Daily fire bulletins have been sent out to the various Regional Advisory Councilmen and chambers of commerce. Complete cooperation has been received from the American Legion in the forest fire suppression work, which has been of great assistance. Due to the prospective fire condition that may occur during the balance of this year, it is thought wise that the Conservation Department conduct an educational campaign of fire prevention again this year. To this end it is recommended that this organization sponsor the circulation of a petition to the State Motor Vehicle Department, asking that the words "Prevent Fires" be incorporated in all 1928 automobile licenses as part of a Prevent Forest Fires' campaign.

Many interesting and important matters covering the state wide activities relating to industrial, aeronautical publicity and kindred problems, were also taken up and disposed of at this meeting.

FIRE LINE MACHINERY

Much has been said about using different kinds of machinery for building fire line. The Lassen has strongly advocated the use of the Quillen trail grader for this work. However, owing to delays in getting our fire truck which would enable us to transport the scraper and horse to fires, we were unable to use the scraper this season until the big fire in Mill Creek Canyon occurred.

Ranger Williams states that the grader proved a great success in building backfire line. This line was built during the night and required a 3-man crew, - one man to hold the scraper, one to lead the horse, and one to light the way with a lantern. Three miles of line were built with this crew in an hour and a half, and the line needed but very little mopping up to make it a first-class backfire line; in fact, the trail was built in fully as good shape as would be done by the average fire fighting crew. --W.G.D. - Lassen.

FIRE HITS SOUTHERN SUBDIVIDERS

The most costly fire in the Santa Barbara National Forest this season does not appear in the records. The fire was started by a smoker on a private subdivision in the Frazier Mountain recreational area of the Tejon District and although it burned only 1¼ acres the loss was around $8,500.

It appears that the area had been subdivided into 25 lots which sold at high figures to Los Angeles families because they were within a little pine forest. The fire burned the trees, and every lot owner threw up his contract to purchase a lot and therefore the subdividers stood to lose the amount stated as a result of the fire.

Later another smoker fire occurred with the result that the 2,700 lot owners on the entire 800-acre subdivision have now formed a local chamber of commerce which, in turn, has organized fire fighting crews and has purchased equipment with which to fight fires. The careless smoker is quickly spotted and ordered to leave.--Santa Barbara.

WHAT PRICE COUGARS

G. E. Mitchell, Chelan

Mention was made in the Service Bulletin of August 16 that Forest officers should record authentic facts about the mountain lion. On one of the many fires on the Chelan Forest this season, evidence was found which adds a new chapter to the depredations of this wily cat.

In a lone canyon on the side of a steep mountain, we found where a cougar had killed and partly eaten what appeared to be a year-old bear. The back of the neck and bowels had been eaten and the rest of the carcass left.

It was quite evident from the tracks that mother bear had disturbed the cougar's meal because leading away from the dead bear were cougar tracks which indicated rapid flight. A much larger track than could have been made by the dead bear, followed the cougar tracks and were spaced as to indicate rapid travel.

At a distance of approximately 200 yards from the dead bear was a place where the grass had been trampled down over a space of 100 feet across, indicating that a battle had followed between the cougar and older bear; which one was victorious was not disclosed by the evidence.

This is the first time that the writer ever knew of a cougar and bear "locking horns" so to speak. But that night around the camp fire many tales were told of bear and cougar fighting, and the odds always went to the bear.

I am inclined to take issue with Mr. Seton in regard to preserving the cougar from total destruction. While I doubt very much if the animals will be completely exterminated for some time to come, I can see no reason why they should be preserved. As an attraction to any particular locality they score zero, and are about as popular as rattlesnakes. They are seldom seen or heard and they live principally on deer and gamebirds and rabbits, which afford real pleasure to tourists as well as local residents.

It has been estimated by men in Okanogan County who have given the matter considerable thought that a mature cougar will kill from 30 to 50 deer in a season. If we start in with a campaign to preserve cougar. We might as well say "goodbye" to the deer.

While the incident is cited as the only one on record in the United States, the memories are too fresh to be easily forgotten: I refer to the killing of a 14 year old boy by a cougar near Malott, Wash., two years ago. No one in this County would agree with Mr. Seton that cougars should be preserved.

PRODUCTION OF FORESTERS

E. N. Munns, Washington

In a recent survey of forestry education in the United States, it was learned that the present enrollment of forestry students in the Forest Schools was about 1,800, not including a very much larger group who are taking forestry courses of one kind or another. Most of the latter are those who are desirous of obtaining some knowledge of forestry through general courses. Many are freshmen, among whom it is reasonable to expect are future foresters. In the senior or graduating classes, which include in some schools only the post-graduate students, are some 230 men. According to the school reports, there have been some 10,000 forestry graduates and special forestry students in the 28 years since the first Forest School was established at Cornell, the 10,000 including those taking short courses, as at ranger schools, those enrolled in ranger schools, and in summer schools. Undoubtedly in this number are many duplications. In 1912 it was estimated there were about 500 foresters in the United States with a technical training. Various estimates place the number of technical foresters between 3,000 and 4,000.

Trail Markers

Robert Munro, Prescott.

In line with the several articles concerning the use of trail markers, instead of blazes, it is suggested that copper nails be used for attaching the markers to the trees. Many of us have seen logs discarded at the mill after saws had been damaged by common nails in the log. Copper nails will eliminate this trouble.

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A SQUAB-EYE VIEW OF THE SIXTH D-3 TRAINING CAMP

By Rangers McDuff and Molohon

A few came by train and the remainder in fifteen assorted automobiles ranging from worn out Fords to "Hudson Super" sedans. When they all finally put thier feet under the mess tables at the Southwestern Forest Experiment Station, on Sunday evening August 15, someone counted 38 Rangers and deputies in attendance at the 1926 D-3 ranger training camp. Sadness or lonesomeness was conspicuously absent. Everyone was looking forward to four weeks of intensive training and discussion which would better enable him to perform his respective job - and none was disappointed.

By Monday morning everyone was pretty well acquainted with the other fellow, and many old friendships had been renewed. A twang of good fellowship was in the air. The school was divided into five different squads with a Deputy Supervisor acting as squad leader of each squad. During the following four weeks these squads remained intact and worked together in all field and laboratory work. This system provided for more individual instruction under men of practical experience and also created much inter-squad competition in the various problems and work. One's squad, of course, was always right -- but then it remained to be proved.

The first week was put in under Mr. Randles on the study of silviculture and sales practice. Perhaps there would be a lecture in the morning or a short talk on such subjects as timber marking or scaling logs. Following the talk a three or four question written quiz would be given in order to see how much had been absorbed. These quiz papers were graded and there was considerable competition bewteen squads. One squad would grade the papers of another against the correct answers given by the instructor and the comparative grades of the five squads would be written on the blackboard. Similarly the results of the field work were cross-graded. Then we would go into the field, on foot, or in cars, and under the supervision of the "squad" leader would actually mark an area of timber, if that happened to be the work for that day. And it did not pay to make too many mistakes because during the review another squad would be sure to criticise. Competition, as the spice of trade, was adequately demonstrated throughout the work.

A week was also spent on grazing, the method of work being similar. Two fifty mile auto trips were made and several of the different types of ranges most common to D-3 were inspected. Data essential for range reconnaissance and range management plans were collected on each type and all conditions noted in the field. On the basis of these data and old reconnaissance estimates a standard management plan was made by each man for the area visited.

Operation included both theoretical and practical work. Telephones, mostly out of order, were installed in the classroom and the men were required to chase the trouble. A line to Wing Mountain Lookout was constructed a stretch at a time, each squad doing the actual construction of a portion then helping to criticise the other squad's work. No fights reported however. The same method was used in trail and road construction, heavy emphasis being placed on the cheapness of using machinery whenever practicable. In this case also, an actual trail was built to be used in connection with the Wing Mountain Lookout. The course also included shoeing and packing. It was then that the practical men got sweet revenge on the technical men who rubbed it in so unmercifully last winter. There was finally a demonstration in applied psychology when operation reserved for the last day the work on plans and the use of time, with the District Forester occupying the pulpit.

Fire, "The Demon of the Forest", was taken up in theory as well as fact - the school turning out to three fires, two of which were man-caused. Convictions were obtained in both cases. A remarkable coincident happened on one of the days spent on fire suppression. Director Loveridge had just completed his lecture and had instructed the school to turn out to an imaginary fire when a phone message was received calling for 30 men for an actual fire.

It is not the intention at this time to go into the details of every subject covered, but rather to give some idea as to how the subjects were handled. The high points of the method followed seem to be:

1. Organization by squads.
2. Individual instruction by experienced men.
3. Keen competition.
4. Blackboard and lecture work, followed by the actual field practice.

Life at the camp, however, was not altogether a continuous round of hard work. Each squad had a given week in which to furnish the entertainment, and the weekly dances became a part of Flagstaff social life. For the anti-femmes, tennis, baseball, barnyard golf and other athletic sports were on hand. It might be mentioned here that a young lady at the last dance was heard to remark that she thought Uncle Sam a rather hateful employer - not letting the Rangers get married, she just knew he didn't for she hadn't met a married one yet!!!

The chief camp sport was baseball. One evening the entire camp turned out for an hour with hoes, rakes and shovels, and cleaned up a place for a ball diamond. From then on, in the afternoon when the day's work was over, everyone collected on the ball field and the Arizona Rangers proceeded to clean up on the New Mexico Rangers or vice versa. One side razzed the other continuously, and when they could not think of enough ornery conjectures to throw at the other side, they picked on the poor umpire. Only a strong man (narrow between the eyes) dared accept the job. When the supper gong sounded they all trudged back up the hill for nourishment - and Sloan's Liniment.

The class of 1926 purchased a baseball outfit for the camp. They also got a tennis outfit, and a tennis court was installed across the road from the assembly hall. This game as played by the Rangers was slightly varied from the ordinary. It was much like the American business man's game of golf - first one man hit the ball over the fence, then they both looked for it.

Sometimes dinner was served in camp and sometimes in the field, but supper was always had in camp. The mess hall was in a building by itself. There were four dining tables, and when these were surrounded during a meal the noise that ensued therefrom was not unlike that of a swarm of bees. Everyone was busy eating, but they all had plenty of time to talk to the other fellow. And that seemed to be one of the fine things of the camp.

When several or more men who have much in common get together they can learn a lot from each other, if they desire to, merely by ordinary conversation. You all probably have problems on your district and you wonder how they are being solved on other places. Here were 38 Rangers from all parts of Arizona and New Mexico with similar problems and a wonderful chance to hear about and talk over new ideas. Full advantage was taken of this opportunity and it will no doubt yield results which might be obtained in no other way.

The evenings in camp, around the fireplace, offered much the same opportunity. Often there was a game of penny ante, bridge, or checkers, or maybe a few played the phonograph and talked. Usually a few around the tables were writing letters or reports for Supervisors. On two or three different evenings the whole bunch gathered around the piano and held a more or less melodious song fest.

The Grand Canyon of the Colorado is only about 82 miles from the camp, and it was the good fortune of all those who desired to make that a week-end trip by auto, returning via the Painted Desert.

To gather together thirty eight men from two states, put them together in one unit, preach to them, work them, razz them just as hard if not harder than any military organization, and to have them smile and come back for more - get that - and like it, denotes but one thing - that that oft mentioned intangible Forest Service Spirit, is not a thing of the past, but is a live factor to-day.

ON GOING BACK TO SCHOOL

E. N. Munns, Washington

In the minds of many technical men who have been on the job a few years is the thought that "some day I'll take another year at school." This becomes intensified at such times as a new technical man is assigned to his Forest, and many a man finds himself wrestling perennially with the question of whether to go on, or not.

It is true that cost is a considerable item, but are not things really worth while worth the price? At some institutions part of the cost can be met by scholarships or instructorships, and one can do much even in this day to reduce the costs of higher education. Unfortunately, there seems to be no way in which the Service can help financially.

The interruption to the job on some Forests is a real drawback to the plan of returning to school, for the Service puts considerable time and money into training an individual, and to lose a man on a particular enterprise may seriously delay or interrupt Forest work. However, if sufficient advance notice is given of such a plan, as good practice would dictate under any circumstances, the Forest should be able to replace one in spite of the fact that he may believe himself indispensable in his given niche. There are times and places where replacement undoubtedly causes loss and interruption, but by and large, these can be met. As a general policy, the Service and the Department both encourage additional training wherever possible.

There is nothing to the possibility of lack of advancement because of not having remained on the job, though some insist it is a fact. One's advancement depends on one's self, and ability, honesty of purpose, and work will inevitably be recognized whether or not the Service sustained a temporary loss when the individual left. Not only is there nothing to it, but the opposite is true for the Service is on the lookout for the best trained and best qualified men it has for the responsible places, and additional qualifications only serve to make one's advancement the more certain and rapid.

There is a big gain to the man when he is able to carry through such a plan. It develops will power and determination. and perhaps gives one better stamina. It enlarges one's circle of friends and acquaintances. It carries to the school a better appreciation of Service work, its ideals, and its practices. It gives a man a better appreciation of the finer things in life; it develops vision, enabling a man to appreciate his problems more fully, to analyze them more clearly, and to organize his attack all the more surely and confidently.

There is also a gain to the organization. A man returning to it from an added year at school has a fresher point of view, he brings new ideas and new thoughts to the job, and because he does and because of the benefits which have accrued to him as an individual, he becomes of greater value to the organization. The Service and forestry need better trained men.

STRAIGHT FROM THE CHIEF

August 31, 1926.

My dear Show:

I do not want to leave California without expressing to you and the entire organization in District Five the pride which I take in the way you have met another critical fire season. The strain of arduous physical exertion and of responsibility for handling fire after fire in rapid succession if not at the same time, during a summer of such extreme and protracted hazard has been a severe test of the grit and staying power and loyalty of the Forest Supervisors and Rangers and the many other Service men who have carried the burden of the fray. I am certainly proud of the way they have seen it through in the face of such adverse conditions. And I am proud of the record they have made.

The continuation and cumulative effects of the drouth were bound to make 1926 a bad fire year in California as in other Western States, with relatively large losses. Nevertheless the record of your District is a gratifying one in many ways. The twenty-five per cent or less of Class C fires to date, the efficiency with which peak fire loads were handled in Districts like Ranger Solaro's on the Shasta, the large proportion of bad fires stopped and held the first night, the fine showing on the southern California Forests, the effective use of the lessons of 1924 - in these and other respects the handling of the emergency does you all great credit. Underlying them is the wonderful "go-get-em" and "stay-with-em" spirit of the organization, unbroken by fatigue and strain and difficulty. Hats off to the California bunch!

We still have far to go in fire control but we are making progress. A season like 1926, occurring fifteen years ago, would have brought an appalling disaster. One of the things we clearly must do is to drive hard for better fire prevention, both in public education and cooperation and in physical improvements on the National Forests. In this I am prepared to back up your organization to the limit.

Very sincerely yours,
W. B. GREELEY
Forester.

DESIGNATION OF RECREATIONAL AREAS BY SECRETARY JARDINE.

On September 24, Secretary Jardine approved the dedication of three recreational areas within National Forests, viz; The Mt. Shasta Recreational area containing 29,620 acres within the Shasta National Forest, California; the Laguna Mountain Recreational area containing 11,495 acres within the Cleveland National Forest, California; and the Mt. Baker Recreation Area containing 74,859 acres within the Mt. Baker National Forest, Washington. Several other recreational areas recommended by District Five will now be submitted to the Secretary with recommendations for similar action. - L.F.K.

"VALUE OF COST RECORDS TO ADMINISTRATION"

By P. Keplinger, D-2.

After writing that wholly unnecessary contribution to the July 19 issue, I swore off and promised never to write again; but like all good resolutions, this one will have to be broken. However, this time instead of criticising, I'm going to try to add something to what Roberts and others have said on this subject.

In reading these articles, I have been wondering if there is not another way to look at the subject. For example, as I get it from reading some of the extensive literature on costs, the producer of the Buick does not spend a lot of time comparing the cost of a Buick with the cost of a Ford. In the first place, he does not have the Ford figures, and anyhow he is not so much concerned with the cost of Fords as with the cost of Buicks. I never can get much kick out of comparing D-5 Buicks with D-2 Fords.

What I'm trying to lead up to is, that possibly there is another way of using our costs in addition to those given by Roberts. As I get it, the chief use in industry is not in comparing one plant with another making a somewhat similar article, but in comparing the costs of a particular plant to-day (now) with yesterday, last week, last month, a year ago. The Disston Saw Company does not know what it costs the Simmons Company to put out a six foot saw, but they do know just what it is costing them and just what it has cost. They also know that costs must go down, not up.

In the same way and for the same reasons, should not the Sitgreaves Supervisor know just what it has cost and is costing to produce and sell the forage on each unit of his Forest? With such information, he is in a position to plan cost reductions. It is relatively less important to know that on the Beartooth they administer a forage acre for less money, since this represents a somewhat different product going to an entirely different market.

As said before, the Simmons people know just what it ought to cost to produce a saw, and they not only watch this cost, they watch it currently. Why should we not know just what it ought to cost to administer each grazing unit and just what IT IS COSTING NOW? Why wait six months or a year until Accounts get out their camparative figures and then, after it's too late to correct it, wonder why it happened to be so high? If the Bush Mountain unit is costing too much this season, why not find it out now, instead of next winter, or the winter after? Cost records are primarily for current use. This use would necessitate something we are all afraid of - cost standards.

And here is another thing to think about: If a given Supervisor cannot produce and sell a standard crop up to standard specifications and at not more than the standard cost, why should he remain on the job?

WILDERNESS PRINCIPLE RECOGNIZED BY SECRETARY

The Official Record of September 22 contains, on page 4, a summary of the Secretary's decision on the Superior wilderness as the outcome of the conference reported in the last Bulletin. This official departmental recognition of the wilderness idea and its embodiment in the plans for developing the Superior National Forest marks a definite milestone in National Forest recreational policy. The plan proposed by the Service looks like a common-sense reconciliation of conflicting needs. It is to be hoped this policy will give impetus to the withdrawal of additional wilderness areas in the West before roads and tourists resort invade all the remaining regions that are suitable. - W. S.

SOUTH CAROLINA COMING AHEAD

By Austin Carry, Washington.

The Palmetto State has not to date figured to any great extent in the forestry news. However, outside appearances are deceptive sometimes; it seems reasonable and safe to count on fundamental soundness in large elements of any American community; as a matter of fact recent close contacts have shown that a good deal that is promising is stirring under the surface.

Older men in the Service will remember work done in the State in the old "working plan" days, for the Burton Lumber Company of Charleston particularly. A degree of success followed that work; for the company followed its recommendations far enough to become assured that statements on rate of growth were conservative and to reproduce some little acreage in timber; later they got discouraged and abandoned it, however.

Between that early date and this conditions have changed in many ways; we might say they have ripened. The Burton Company has been out of business for some years, but another has its property, and this company along with a coupl of others in the neighborhood recently asked for the cooperative service of the writer. No account of this service will be given; the design simply is to tell of some things which illustrate a more or less progressive state of affairs that was actually found, paralleled no doubt in most sections of the country.

The present owner of the old Burton property is a man who is said to have ridiculed the efforts at reforestation in their day, but these results on a recent inspection looked good to him. At 24 years of age dominant loblolly pines were between 50 and 55 feet tall and up to 10 inches in breast diameter. Pulp wood could have been cut there in quantity; 20 years more will furnish a generous cut of saw timber. That fits nicely into present business plans; the only regret is that there is no more of it, for the contrast is great between this and land that was not protected.

And the three concerns are in earnest; they mean to operate in a careful judicious way, to secure timber reproduction if limiting conditions will at all allow, if possible to put their operations on a permanent basis. One has already gone some distance in reorganizing its work, having put a man in the woods to mark the trees to be cut, also having made arrangements to secure fuel and spur ties from tops and other waste material rather than at the sacrifice of growing timber. A conference of all concerned at the close of my two weeks' stay among these men was most satisfactory and promising. These concerns are going to help one another in working out their problems.

That is not all by any means. Mr. Tryon, Extension State Forester for a year past, has found more openings for work than he can attend to; then the writer encountered two other cases of progressive action of a most encouraging kind.

The Carolina Fiber Company at Hartsville is a progressive concern, manufacturing both paper and lumber, owning some 30,000 acres of land. They were visited once before and a very satisfactory small lumber operation found that in the past two years has improved on its record. But the most noteworthy thing here is that the company in 1924, at the writer's suggestion, ran two small thinning jobs, the product pulp wood, the chief object, however, improvement of young stands of timber. Results were satisfactory; they expect to do more of it; also they are likely to turpentine in advance of this cutting when they have prepared for it and the market is right. Right here therefore a couple of progressive measures have received or are likely to receive effective illustration, effective especially be cause carried on by a keen business concern that knows what it is about.

The Camp Mfg. Company at St. Stephens own no land, are operating under lease only, yet this noteworthy thing was found with them - for 6 or 8 months (the operation here is a new one) they had been leaving seed trees. That was hard to believe in the circumstances, but there the trees were. The chief technical fault I could find was that what seemed to me needlessly valuable timber was sacrificed for the purpose. If any other motive can be assigned for such action than perpetuation of lumbering this writer has been unable to imagine it. The same holds of the company's desire for assistance in educating the surrounding people against the fires now so prevalent.

The writer gains from different sources this impression of affairs in the country at large - that forestry is moving fully as fast as it can be guided in effective and economical lines. If that is true the contrast between present conditions and those pictured 7 years ago when Forester Graves first launched his country-wide agitation is marked indeed and most promising.

FOREST FIRES - OR WHAT HAVE YOU?

By E. H. MacDaniels, D-6

Another convincing piece of evidence that protection has been making progress turned up in D-6 recently. It appears that in the seasons of 1924 and 1925, the loss by fire of nonsalvable mature timber in Washington and Oregon is about 1/200 of one per cent of the remaining stand. This was accompanied by the information that overemphasis on the loss of merchantable timber is having some bad effects. It keeps insurance rates at an almost prohibitive figure, scares off possible investors and gives concrete, steel and other wood substitutes an advantage that is being used to the detriment of the timber market.

In California all protective agencies have agreed to accompany press reports of fires with additional information about what the fire is doing. They have three classes of fires there - those in timber, those in brush, and those on prospective timber land. This may prevent the spread of the idea that every fire means a loss of merchantable timber.

In Washington and Oregon the classification will probably be somewhat different. The additional information will show whether the fire is in merchantable timber, in the original area, or in operations where the fire is confined to slash that will be burned sooner or later for protection.

This change, if it takes place, will deprive us of some of our most effective thunder. Loss of actual dollars is more spectacular than the loss of prospective dollars. However, it will draw more attention to the growing crop and that is where our attention belongs.

The small loss of merchantable timber shows that during the last few years some people, at least, have been careful with fire.

EXHIBIT AT GALLUP INTER-TRIBAL CEREMONIAL

The Forest Service panels showing protection, timber, forage, and health are again doing duty at the Indian Ceremonial, at Gallup, under the supervision of Ranger Reuben Boone of the Manzano. The display is in the exhibit building together with Indian wares and handicraft and a small showing of agricultural products. It is very well situated about the center of the building. Although the ceremonial proper did not open until 2:30 in the afternoon, the building containing the exhibit was crowded with visitors most of the morning and after the closing of the program in the afternoon. Any number took the trouble to inform the Forest Service representative of their interest in forestry, emphasizing their understanding of the necessity for conserving and protecting our forest resources. It is very evident that the subject of forestry is in the minds of all classes of people - District 3.

THE SUPER'S BIRTHDAY PARTY.

A letter recently received from Supervisor McCain runs as follows:

"This day, the seventeenth of September nineteen hundred and twenty-six has been some memorable day and I cannot help but tell somebody about it.

1. A fire reported as at Leigh Lake turned out to be a false alarm.
2. Mosquito Creek fire in bad windfall absolutely under control before it reached standing timber.
3. Apprehended and convicted party, one member of which was a .... in uniform, of leaving a camp fire. $10.00 and costs.
4. Received a telegram announcing the arrival of our first grandchild.
5. My fifty-second birthday.
6. (Read this two or three times). Apprehended my vociferous friend ...., for fishing without a license and for leaving a huge camp fire unextinguished. Hearing set for the 20th.

Is life worth living? Well I should say it is." - District 4.

"THERE WERE GIANTS IN THOSE DAYS"
(AND WHOPPERS !)

By W. A. Dayton, Washington

In the Service Bulletin for August 23

was a most engaging account by Ranger Brokenshire of the Mono anent the fossil remains of "Paul Bunyon's Son?"

Dr. Walter Hough, Acting Head Curator of anthropology of the U. S. National Museum writes as follows, under date of September 1926:

> "There is no foundation in fact for the finding of a human tibia three feet long. The bone was likely that of an elephant, one of the animals which made the Carson footprints. I do not know whether the proportion of the tibia to height by races has been studied. I suppose that the tibia in a six foot man (Indian) would be 15 in., making 1 to 4.8."

If the three-feet Pine Grove tibia was human then, according to Dr. Hough's ratio, the original possessor was about 14 feet, 4 inches high. However, Dr. Hough disappoints us by stating that the bone belonged to the genus Elephas (or near) rather than Homo.

SWEDISH FORESTERS GRATEFUL

The following telegram has been received from Dr. Tor Jonson, President of the Swedish National Forest School, and Dr. Folke Johansson, Secretary to Dr. Jonson and Professor of Forest Mensuration in the Swedish Forest School, who have recently visited National Forests, Forest Experiment Stations, and a number of the Forest Schools:

"Leaving United States we are anxious to express our deepest gratitude for the splendid hospitality and the extreme courtesy we have met from Forest Service men in all parts of your wonderful country and we will ever remember the friends we thus have made."

BUFFALO IN OREGON

By John D. Guthrie, D-6.

It is believed that it is not generally known that the buffalo or American bison were once found in Oregon. According to an article by Dr. C. Hart Merriam in the August 1926, issue of the American Journal of Mammology, they were.

It is a matter of historical record that Peter Skene Ogden in 1826 found buffalo at Harney Lake. Dr. J. A. Allen, the noted scientist-explorer records buffalo as being found in the Blue Mountains. Prof. O. C. Marsh found buffalo skulls and remains on Willow Creek on the southeastern foothills of the Blue Mountains in 1873.

A few years ago, Vernon Bailey, U. S. Biological Survey, found buffalo skulls in the Malheur Lake Valley, and Stanley Jewett, of the Survey, has found skulls in that region.

In view of this, and other researches of his, Dr. Merriam states that buffalo must have been fairly abundant in eastern Oregon, that they annually drifted down into the upper Sacramento Valley of California and back in the spring.

KAIBAB DEER

Unless something unforeseen arises, the Grand Canyon National Game Preserve will be opened to hunting during October, under the State laws and the same conditions as existed last year. The State law limits the season to the month of October and a bag limit of one buck deer and requires a payment of $1.25 by residents and $20 by non-residents. The Secretary of Agriculture requires the payment of $2.50 whether resident or non-resident of the State. - District 4.

Service Bulletin

U.S. FOREST SERVICE
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MORE ABOUT DEER

The "Chuck Wagon Scientist" is Forced to do Research work

By Will C. Barnes, Washington.

The Service Bulletin of August 30 was hardly off the press before I found myself interrogated as to mule deer, black-tailed deer, white-tailed deer, "or what have you". "Surely there were black-tailed deer in Arizona", said one. "How about the little so-called Sonora deer found in Arizona? What is he?" asked another. "How many kinds of deer are there, anyhow?" My, how the questions did pour in! It kept the chuck wagon scientist busy trying to answer them.

Right in the beginning, if every Forest officer interested in game and fur-bearing animals will dig up three dollars and send to the National Geographic Society, 16th Street N. W., Washington, D. C., for a bound copy of Dr. E. W. Nelson's wonderful work on the Larger North American Mammals", he will make a worth while investment and have the most complete and beautifully illustrated work on these animals that has ever been published. In it everyone of our American game animals and fur bearers is illustrated in colors so carefully done, so true to life, that identification is easily made. It was published as the issue of the Geographic Magazine for November, 1916. If you are a subscriber you may have it hid away on some shelf.

We have but four species of deer in the United States although the elk really belongs to the deer family. These four are (1) the mule deer (Odocoileus hemionus) which ranges "from northern Alberta and western Iowa clear down into Mexico and on the California coast, and is especially numerous in the Rocky Mountain region." These have white tails and the white patch on the rump as explained before.

(2) The black-tailed deer (Odocoileus columbianus) and sub-species. These are the only American deer with black tails and without any white on the rump. They have the same large ears as the mule deer, and have a very limited range, being found ONLY "in the dense humid forests along the North Pacific coast from Juneau, Alaska, down as far as central California." Unlike other deer, the black-tails commonly have twins and triplets -- a feature which has enabled them to withstand tremendous drafts on their numbers by unrestricted hunting in the far north. There are no black-tails in Arizona or anywhere else except in the regions indicated.

(3) The Virginia or white-tailed deer (Odocoileus Virginianus) and sub-species. This is the common deer of all our eastern states. It ranges from Northern Ontario to Florida, from the Atlantic coast to the Great plains, and in the Rocky Mountains south to New Mexico and in the Cascades and

Sierra Nevada to Northern California", is the statement made in Dr. Nelson's book above referred to and from which I have deliberately and brazenly cribbed most of this material. "The upright, flashing, vivid white-tail", Dr. Nelson says, "is a mark which should instantly classify this animal wherever seen."

(4) The Arizona white-tailed deer (ODOCOILEUS COUESI). In Arizona these are often called "Sonora deer". According to Dr. Nelson "they are like pigmy Virginia deer. They range from middle Arizona, southern New Mexico, western Texas and down into the yellow pine forests in Sonora and Chihuahua, Mexico." They were once very common all over the region included in our Sitgreaves and Apache National Forests.

Cursed with a strong desire to know about strange words I endeavored to find out the meaning of "ODOCOILEUS" as applied to all these four deer. Friend "Daytonius", who knows more Greek and Latin than all the rest of us put together, said it was a Greek word and meant "hollow toothed." That didn't sound right to me for deer don't have hollow teeth. Several high authorities linguists, biologists et al were appealed to but none of them could give any explanation of its real meaning or say just why it was applied to deer until I came to Dr. Miller of the National Museum, who knew all about it and had it at his finger ends, as it were. "That name", Dr. Miller explained, "was given to the deer family by a famous botanist named Rafenesque who over a hundred years ago found in a cave some bones and teeth which he fondly believed belonged to some prehistoric deer then unknown to science. The teeth had distinct grooves on their sides -- as do all deer teeth -- and he used the word 'ODOCOILEUS', meaning 'well grooved tooth', to identify the, to him, new species." So that was cleared up very nicely.

As for the word "HEMIONUS" as applied to the mule deer, Dayton solved that at once. "It means 'half ass' which undoubtedly refers to the huge ears, Lemi (half) and onus (ass)" just like that he said it. So there you have the meaning and origin of the two words.

The word "COUESI" as applied to the little Arizona white-tailed deer was easy enough. The animal was first described by Dr. Elliot Coues, a well known army surgeon, who in addition to his duties of ministering to the medical needs of the soldiers, myself included, at various early-day army posts in the Far West found time to study and describe with great detail and accuracy a large number of the animals, birds, and flowers in the regions in which he was stationed. His writings on these subjects are standard and authentic.

"COLUMBIANUS" and "VIRGINIANUS" are words that of course tell their own meaning.

Constantine Samuel Rafinesque, the man who hung this odd name -- ODOCOILEUS HEMIONUS -- onto our inoffensive mule deer, was such an interesting character as to merit a few words himself. Born in Constantinople in 1784 of French-American parentage, he died in Philadelphia in September, 1842. He was named Constantine because of the city of his birth. He came to America very early in his active life and aside from his principal work, which was botany, wrote on a wide variety of subjects. The list of his published writings covers more than sixty headings, including the flora and fauna of several widely separated States, especially Florida, Kentucky, Oregon, the White Mountain region of New Hampshire, Vermont, and other eastern and western States.

NATIONAL FOREST HISTORY

By L. A. Barrett, D. 5.

The Klamath Forest has collected considerable information relative to the early history of the Kamath River region, and is adding to this record constantly. In the open files is carried a guide labeled "History and Place Names." Back of this guide and filed behind the proper alphabetical index are magazine and newspaper clippings collected by members of the force, as well as typewritten and penciled memorandum of historical interest that are sent in from time to time by Forest officers.

This file already makes interesting reading, and the plan is one that could be followed to advantage by every Forest in the District.

A BIGGER WAR CHEST

President Coolidge has become deeply interested in the problem of forest fire prevention, and has invited a committee of northwestern business men to meet him at the White House on October 7 to discuss larger and more consistent Federal expenditures for protecting the forests in cooperation with State and lumbermen's agencies.

It is assumed that he has been moved to this course by the much heavier losses in the National Forests this year than in private timber. E. T. Allen, Forester of the National Lumber Manufacturers Association, and manager of the Western Forestry and Conservation Association, Portland, Oregon; A. W. Laird, Potlatch, Idaho, President of the Association; E. C. Sammons, Vice-President of the United States National Bank, Portland, Oregon, and about twenty other northwestern business men will make up the delegation.

The Forester of the National Lumber Manufacturers Association calculates that the potential forest area burned over is about 1,200,000 acres, on which were damaged or destroyed seeds, seedlings, saplings and advanced merchantable second growth - the forests of the future. The loss of logs and equipment is put at $749,700. The cost of fighting the fires was $4,750,000, which probably just about equaled the tangible loss.

The United States Forest Service and the great fire fighting organization of the lumbermen unite in the claim that while great advances are being made in guarding the forests from fire, the whole present system is on too small a scale. To attain the maximum of practical protection the average annual expenditures should be about three cents an acre for all the forest land in the United States, or about $13,000,000, as compared with $3,000,000 to $5,000,000 at present. - National Lumber Mfgrs. Ass'n, Press Release.

WHAT IS LUMBER?

By R. K. Helphenstine, Jr., Washington

The Federal Trade Commission has called upon the Forest Service for a definition of the word "lumber." This request comes in connection with a petition filed with the Commission by a well known lumber organization to restrain certain manufacturers of substitute building materials from advertising their products as "lumber." The products in question are those made in thick, wide sheets of any length needed, from extracted sugar cane, wood pulp, and similar raw materials, and used largely as a substitute for lath and plaster, for sheathing, and for insulation. For such purposes the manufacturers claim that their products possess properties that make them equal to or better than lumber, and therefore can properly be called "lumber."

That eminent scholar, Daniel Webster, defines lumber as follows:

> Lumber: Timber sawed into merchantable form, especially boards.

Apparently the Forest Service during it's accumulation of a vast amount of information relative to the lumber industry has neglected to include in any of it's publications a standard definition of the word "lumber." Do you think the one given by the learned Webster is adequate, or have you another that you feel is better?

TREE PLANTING ON THE WICHITA FOREST

By John H. Hatton, D. 2.

About thirteen or fourteen years ago

down at Cache, Oklahoma, Frank Rush started some plantations which, to-day, I would include among the monuments he erected on the Wichita Forest during his period of excellent and commendable service as Forest Supervisor. If you will look at a map of the Forest, you will find permanently recorded such references as "Cedar Creek Planting"; "Panther Creek Planting"; "Elm Springs Planting"; "Pleasant Valley Planting"; "Reck Planting"; and "Baker Peak Planting". In another instance, at about the same time, application was made for a special use for a small garden Rush granted the use on the condition that a few trees be planted. These trees now designate one of the favorite camping spots on the Forest.

In these plantations were native juniper, osage orange, black and honey locust, black walnut, and mulberry. All but the mulberry and parts of the walnut plantations have been decidedly successful and are among the show spots of the Forest. But even in the walnut plantations there is a survival of some 500 trees from 9 to 30 feet tall, some of them in the bearing stage. I would estimate 15 to 20 bushels as the 1926 crop of black walnuts, for instance, on a limited number of trees in the Panther Creek plantation. The monetary value of these remaining 500 walnut trees I would think sufficient to pay the cost of all the plantations to say nothing of their present value.

The juniper and osage orange plantations are well-nigh perfect stands with forest conditions completely established. I saw two prickly pear cacti on the ground floor of the osage orange plot, the only ground vegetation visible from my point of vision; and to penetrate that grove with its 3¾ × 3¾ spacing would be comparable to negotiating the World War entanglements. The honey and black locust plantations have some breaks in them, but many of the trees are post material size, reaching a maximum height of 25 to 30 feet.

The juniper planting at Cedar Creek is outstanding. Twenty thousand native seedlings were dug from the Forest and planted on ground prepared by plowing and to-day there is a survival of fully 90%, the trees having attained an average height of about 13 to 14 feet. Quite extensive Christmas tree sales are made from this plantation at $1 per tree, and a great many branches are used for Christmas decorations. The trees are cut to within about a foot of the ground and one vigorous branch left which soon develops, fed by a strong root system, into a tree as large as the original. Perhaps this renewal can be managed indefinitely and the principle of perpetual motion established (?).

If some one were to ask my opinion of the present valuation of this 13 year old plantation containing 16 acres, I should place it at not less than $20,000.

The plantations serve as excellent refuges for birds and game and have justified themselves from that standpoint alone, but the economic phases of tree planting are apparently worthy of renewed and further consideration in any development program for the Wichita.

POLICIES, WHENCE COME THEY?

From "The Bulletin", D. 1.

Sometimes we wonder where some of the Government policies originate, and rarely are we able to single out the responsible individual. I think it would do our hearts good to find the guy responsible for the fiscal year, but here's the man who is responsible for favoring the small stockman in our present grazing regulations:

"Dec. 26, 1905.

Hon. James Wilson,
Secretary of Agriculture.

My dear Mr. Secretary:

I have received your letter of December 20. I cordially approve the policy you are carrying on. Your effort is to keep the grazing lands in the Forest Reserves for the use of the stockmen, and especially the stockmen who actually live in the neighborhood of the Reserves.

To prevent the waste and destruction of the Reserves and keep them so that they can be permanently used by the stockmen, no less than by the public, you have to spend a certain amount of money. Part of this money is to be obtained by charging a small fee for each head of stock pastured on the Reserve.

Less than a third of the actual value of the grass is at present charged, and it is, of course, perfectly obvious that the man who pastures his stock should pay something for the preservation of that pasture. He gets all the benefit of the pasture and he pays for its use but a small fraction of the value that it is to him, and this money is in reality returned to him because it is used in keeping the Forest Reserve permanently available for use.

You, this year make a special reduction by which the small ranchman pays but half-rates. This is in accordance with the steady policy of your department as regards the western lands which is to favor in every way the actual settler, the actual home-maker, the man who, himself tills the soil or himself rears and cares for his small herd of cattle.

In granting grazing permits you give preference first to the small near-by owners, after that, to all regular occupants of the Reserve range; and finally to the owners of transient stock.

This is exactly as it should be. The small near-by owners are the homesteaders, the men who are making homes for them selves by the labor of the land and to bring up their children thereon. The other occupants of the Reserve range -- That is, the larger ranch owners -- are only entitled to come after the small man. If, after these have been admitted, there still remains an ample pasturage, then the owners of transient stock, the men who drive great tramp herds or tramp locks hither and thither, should be admitted. These men have no permanent abode, do but very little to build up the land and are not to be favored at the expense of the regular occupants, large or small.

This system prevents the grass from being eaten out by the great herds of flocks of non residents, for only enough cattle and sheep are admitted upon the Reserves to fatten upon the pasturage without damaging it. In other words, under the policy you have adopted the Forest Reserves are to be used as among the most potent influences in favor of the actual home-maker, of the man with a few dozen or a few score head of cattle, which he has gathered by his own industry and is himself caring for. This is the kind of man upon whom the foundations of our citizenship rest, and it is eminently proper to favor him in every way.

Sincerely yours,

THEODORE ROOSEVELT."

(WHOSE) "HANDWRITING ON THE WALL"?

By A. H. Hodgson, D. 6

In connection with the "Survey of Wood Waste in the Logging Camps of the Douglas Fir Region" I have gathered, as a side issue, considerable data regarding the period of years which the various logging companies have before them until their present virgin timber holdings are completely logged off. Using the present yearly cut and the present ownership as a basis, I find, according to the statements of many representative companies themselves, that a surprisingly large number of operators will be completely cut out within a period of from five to ten years. I find that only a very small percentage of companies have more than ten years cut ahead of them.

As an example, a tabulation has recently been prepared by a man who is connected with the industry showing the number of years cut ahead of twenty-two large companies in the Grays Harbor region of Washington, which has until recently been credited with containing almost an inexhaustible supply of virgin timber. According to this tabulation, which has also benn checked over by six operators who are well acquainted with local conditions.

13 companies will be cut out within a period of 5 years

7 companies have from 5 to 10 years to run.

2 companies have more than 10 years to run.

This situation appears to be quite characteristic for all privately-owned timbered areas within striking distance of the principal logging centers throughout the Douglas fir region. I find that the individual operators recognize this condition and are very much concerned about it.

These facts, originating from the industry itself, are quite interesting in view of the article entitled, "The Lumberman as a Conservationist "appearing in the Literary Digest of August 21, 1926, and which quoted Henry Schott of the West Coast Lumber Trade Extension Bureau.

HOW'S THIS?

A Nevada Ranger impounded a bunch of stock. Their owner called and was anxious to redeem them but had no money. The Ranger promptly loaned him the money and the trespasser took his stock and went on his way rejoicing.

ANOTHER "FACT" EXPLODED:

Every now and then we get a jolt by finding that what we have regarded as truth since time immemorial is not so at all. We have all in our youthful days relied for safety against the onslaught of the imaginary bear by mentally climbing a small tree and have firmly believed that we would be entirely safe in such a refuge. The following story proves this belief to be erroneous. Ranger Naylor and Assistant Supervisor Dwire of the Carson were prowling around the Cow Creek Ranger Station when Laddie Boy, Naylor's airedale, sent up such a furore that the Forest officers decided to investigate and found Laddie Boy had a sizable brown bear treed. After the excitement subsided, the brilliant idea of capture by the lariat was hatched and bruin was promptly lassoed, and dragged down out of the tree, and hog-tied, but not securely enough, as one foot jerked loose and said bear made a bee line for a certain aspen tree about 6" D. B. H. which Ranger Naylor had mentally reserved for his means of escape if needed. Dwire, we are informed, was more cautious and remained on his horse. With this turn of affairs it was decided best to turn bruin loose, so he was again hauled out of the tree and Ranger Naylor severed the rope on his neck and then made tracks across country passing several rabbits en route. The bear meanwhile was just a lap behind and slowly gaining until Ranger Naylor made an abrupt turn and greatly to his delight found the bear kept the original course and in fact was not chasing him at all but was merely on his way home.

MORAL: Bears can climb small trees - and if one is behind you and both of you are going like sixty it does not necessarily mean he is after your goat. He may only be trying to save his own.

FOREST FIRE MATERIAL CARRIED THIRTY MILES:

During this summer's heavy fires in the West, large quantities of ashes, charcoal, and other fire material were carried great distances. In the Bureau of Research at Harrisburg is a small quantity of ashes and charcoal which was carried a distance of thirty miles from West McDonald in the Glacier National Park to St. Marys. A. E. Rupp, Chief of the Bureau of Forest Management, reports that in 1920 when he was District Forester at Fort Loudon, fire material was carried from a fire burning on Sideling Hill in Fulton County to Fort Littleton in Franklin County, a distance of nine miles. Can you beat it? -- Pa. Service Letter.

COMBATING THE HORSE NUISANCE

By George W. Lyons, Modoc.

For many years Forest officers have known that a great many unpermitted horses were using the Modoc National Forest. Open winters for several years past have greatly augmented them, since they run on the open range yearlong, and no severe winters have reduced their numbers by starvation. The low price of horses has also been no small factor in the increase, as the majority of trespass animals are not worth looking after. The offspring of trespass stock is the "fuzz tail," as no attention has been given to breeding on the ranches, and scrub studs on the open ranges are plentiful.

Occasional round-ups have been held in the past in cooperation with interested stockmen, but no concerted action was taken until 1925. It was decided that the only way results could be secured was by making a job of the horse round-up. Two things favored us, one a State Estray Act which the Counties of Modoc and Lassen authorized me to operate under on the Modoc National Forest, and secondly a favorable "chicken market."

We were fortunate in securing the services of probably the best horse rider in northern California to ride for us, and a large pasture suitable for holding purposes.

After a bunch of horses were rounded up, brands were determined and owners notified. A date was set on which horses could be redeemed. To redeem animals the owner was obliged to pay: Riding charge, $5; pasture charge, 15 cents per day for the time held; Government trespass charges.

The next step was to advertise for 30 days in a local paper. Additional copies of the advertisement were posted in Post Offices, etc., in the vicinity of the forest. Up to the time the sale commenced, on the day of the sale, horses could be redeemed by paying in addition to other charges the advertising costs.

Many animals were donated to us under bill of sale by progressive stockmen who were anxious to rid the range of worthless horses. Many stockmen wanted to redeem part of their animals and let the others go to sale. In such cases we usually secured bill of sale for the unredeemed animals before releasing the others.

The rider secured $5 a head for gathering redeemed animals and from $2 to $3 for unredeemed, the latter being dependent on sale price. No reduction in riding charge was made for owners riding with our riders.

After the advertising period had expired an auction sale was held. We usually secured a Deputy Sheriff to auction off the animals. We made it a rule that for individual horses no bid of less than $8 per head would be considered. This was necessary to prevent worthless animals being bought at a low figure locally and being dumped back on the ranges; also; we had to make the business pay its way. After all individual horses were auctioned off, we usually put up the rest of the bunch at $5 per head, which was approximately the prevailing "chicken" price. If no bid was received, the remaining horses were shipped as chicken horses, our riders delivering them to the nearest shipping point. Bills of sale were given for all animals sold.

Funds were deposited in our local bank and handled in the name of the California Cattlemen's Association through previous arrangement.

There is only one way of making such a round-up successful and that is by treating everyone absolutely the same and showing no favors. I received a legion of excuses and had I begun to make allowances, I would have soon made a fizzle out of the whole round-up. I received a lot of harsh criticism, especially from small homesteaders who claimed a right to run their excess horses on the forest. Permittees backed me up almost 100 per cent and many of them rendered valuable assistance. Our records showd a small balance on the right side of the books to begin our 1926 operations on.

The following summarizes our activities for 1925-

1925 round-up work began first week

After conferring with representatives of the Department of Forests and Waters it was found this material could be obtained from the branches of evergreen trees felled in lumbering operations. This is a step in the right direction and it is hoped this new practice of the city of Allentown will be used as an example by other cities and individuals in collecting decorative greens. With the Christmas season approaching large quantities of decorative material will be used, and it will be a wise forest tree conservation to collect all the decorative material possible from the refuse or "left over" of lumbering operations, and in this way save thousands of living young trees for our future forests. Forest authorities regard the step that Allentown is taking as one of the most practical steps in conservation, and hope the practice will grow and help eliminate the needless destruction of many thrifty growing trees. -Pa. Service Letter.

THE LOOKOUT TOWER

A new praiseworthy note in wild life conservation is the increasingly audible protest against the slaughter of birds and animals because of their alleged bad habits. It permeates Seton's "Lives of Game Animals," recently reviewed in this column and it crops up again strongly in the leading article in the last issue of "American Forests & Forest Life."

Of course there are certain noxious and dangerous creatures that must be got rid of. But most of the "vermin" we complain of are at worst only skilful competitors of man. And one of the things we are coming to see is that the extermination of a species often has indirect and unpredictable results that are much more costly economically than the "bad habits" of the creature destroyed.

Thus the great reduction in coyotes and other "varmints" in Northern Minnesota has permitted a large increase in snowshoe rabbits, who dearly love the shoots of white pine and raise hob with plantations and natural young stands. In fact it is doubtful if white pine and snow-shoe rabits are at all compatible. Mother Nature had succeded nicely in raising white pine, coyotes, and rabbits all together in the same garden patch until we interfered and bungled the job.

A little knowledge is still a dangerous thing. - S.

GOPHER TRAPPING ON THE NEBRASKA

For a number of years the Biological Survey has been cooperating with the Forest Service in gopher extermination work in the Nebraska Forests plantations. Poisoning was the method used for several years but this has been discontinued, since it is not as effective as trapping. The Macabee gopher trap has been found most efficient for trapping.

Most of the work of the past spring was conducted in the newer plantations where it is necessary to trap year after year to keep the gophers from coming back. Very little work is necessary in the older plantations, except to keep out occasional stragglers.

Men in this work use saddle horses and carry a string of fifteen to twenty traps. Each is marked by a flagged lath. Last spring's operations resulted in securing 4,347 gophers. It has been found that spring is the best time for trapping, for at that season of the year it is possible to secure large numbers before the young gophers arrive. - District 2.

ANOTHER EXCHANGE MILESTONE ACHIEVED: The Lincoln National Forest has just acquired value title to 160 acres of land in a timbered canyon, with a brush area adjoining, in the LaLuz watershed, supplying water for the towns of La Luz and Alamogordo. This land was acquired through an exchange with S. J. McCracken of Mountain Park, New Mexico who received $430.00 in cash, the proceeds of sale of timber granted him in exchange for the land. - District 3.

Service Bulletin

U.S. FOREST SERVICE
(Contents Confidential)

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WILDERNESS RECREATION AREAS

By W. B. Greely.

I confess to considerable fogginess of mind in the past regarding the wilderness idea in National Forest administration. The conception of retaining sections of country which cannot be penetrated by the automobile and which offer opportunities for rugged and manly recreation through travel by canoe, horseback, or afoot is appealing. On the other hand, the dedication of National Forest lands in substantial quantities to a perpetual exclusion of economic uses, where commercial resources of large intrinsic value are present, brings us face to face with cold facts. We can not ignore the industrial and community relationships of the National Forests and the responsibility we would assume in undertaking to withhold economic resources from use for all future time.

We now have many large areas that are still wilderness of the most approved sort through accidents of topography or remoteness. At the same time we are dealing in the main with regions of expanding population, of growing community needs, of timber resources which are being depleted in the zones hitherto regarded as accessible, and of general needs for industrial and social expansion. We know that timber and water and forage which were regarded as inaccessible fifteen years ago are now in demand or actively used. We know that this widening demand will flow back farther and farther into the National Forests and that existing conceptions of inaccessibility will fade away before it. We have made many pronouncements, first and last, as to the ultimate value of the physical resources in the National Forests when they are fully developed. We have used this as an argument on many occasions to States and counties impatient for more revenue.

Our discussions of the wilderness policy have, at least in my own thought, been predicated on the supposition that a wilderness area requires per se the permanent exclusion of all forms of economic development. We have become accustomed to the wisdom of restricting or modifying customary forms of commercial use within reasonable limits for the protection of recreation and the natural conditions conducive to recreation. We leave roadside strips in cutting timber or at least mark more conservatively in them; we leave natural conditions around lakes and camp grounds and in canyons populated by summer homes; we preserve beauty spots; we restrict grazing where it would interfere with camping and other forms of recreation and set aside meadows for saddle and pack horses. Such adjustments, seldom involving large areas or large curtailments in the economic utility of the National Forests, we believe desirable in promoting the greatest public service. A "wilderness", however, means something big. The withdrawal of wilderness areas, of proportions commensurate with the term itself, from the customary forms of economic use is necessarily a step to be taken only with a great deal of consideration. For the time being and even for many years to come, such withdrawls can freqently be made without sacrificing economic development. But in my discussions with field officers during the last few months, about the deliberate retention of wilderness areas, I have found them principally concerned by doubts as to the wisdom of attempting to settle now the future policy of the Service regarding the economic use of large stretches of National Forests, and by hesitancy to dedicate large areas to the permanent exclusion of economic uses in the face of expanding community and industrial needs.

As is so often the case, a general problem of this nature is clarified by specific instances. Two of these have come within my own work during the past summer. The first of them has to do with the head of the Middle Fork of the San Joaquin River in the Sierra National Forest, one of the proposed additions to the Yosemite National Park. This is high mountain country with fine scenery - a bit of alpine wilderness in all practical aspects, reached only by trail. It contains no timber of commercial value. Its predominant use is for recreation. This predominant use is slightly, if at all, interfered with by the grazing of a few thousand head of sheep. Considerable prospecting has gone on for years, in places, without destroying the wilderness aspect of the country. The most valuable economic resource in the long run is probably several lakes and other sites where small reservoirs can be established, - a use which the local people and State Engineer believe will be necessary in the course of time.

The common-sense policy in administrating this area to me is perfectly clear It should remain a wilderness area to the extent that no roads should be built by the Government and no permits issued for summer homes, hotels, or other structures. Its recreational use should be protected by the further curtailment of grazing if and when that is fonnd necessary. In the interest of recreational use and scenic preservation, probably two or three small lakes and waterfalls of exceptional beauty should always be retained in their natural condition. Elsewhere the ultimate development of small reservoirs to supplement irrigation and power storage at lower elevations should be permitted when there is a demand for them. They cannot materially change the wilderness character of the region. Prospecting should be permitted to continue. If large mining developments should eventually materialize, then and then only will the character of the country be really changed. In that event the "wilderness" will have to step aside in favor of a form of economic development undoubtedly of greater public moment. For the present, the Forest Service may properly call this a wilderness area, which means no road building, no permits for recreational structures, and any further adjustments of grazing that the recreational use may necessitate.

The second illustration is still clearer. This is our policy affecting about one-half of the Superior National Forest, in northeastern Minnesota. The Supervisor has designated as wilderness areas several large sections of the Forest containing the best of the water routes, fishing grounds, and opportunities for canoe travel and camping. They aggregate approximately 1000 square miles. These areas can apparently be protected without building roads into them. Here again no permits will be issued for summer homes, hotels, or other recreational structures. BUT the timber will be utilized under our plans of forest management and the main purpose in the creation of the Superior National Forest thus maintained. In cutting the timber, lake shores and camp grounds will of course be protected.

With these specific instances in mind, perhaps a sound wilderness area policy on the National Forests can be defined roughly in the following terms:

(1) The selection of areas, as part of our recreational program, naturally adapted to camping and allied forms of recreation in connection with canoe, horse, or foot travel, which can be protected adequately without the building of roads. There need be no standard of size. They can be

small or large as topographic factors, protection requirements, or other considerations may dictate. Nor need there be any standard of frequency. Ordinarily every National Forest will have several. There should be enough of them to provide types of recreation away from the beaten paths in reasonable proportion to the provision for motorized recreation.

(2) In such areas the Service will build no roads and will issue no permits for summer homes or other recreational improvements. Probably no recreational permits of any kind should be issued. The wilderness area should be an open country.

(3) In wilderness areas recreation will be recognized as a highly important, if not dominant, use; and the usual protection will be afforded camp grounds, forage required for saddle and pack stock, spots of special beauty, and the like. Subject to such restrictions, the use of timber, forage and water should ordinarily take its normal course.

(4) The utilization of economic resources may in time require the construction of transportation facilities as a necessary incident. That feature of a particular situation can only be dealt with at the time, with the Service keeping its hands free to deal with it in the most common-sense way, while maintaining its recreational policy in so far as essential needs in the use of economic resources will permit.

The policy boils down to outlining areas where the Service will build no roads and issue no recreation permits. The methods of administration in other respects will doubtless vary as between different areas, with the general conception that the wilderness program does not require exclusion of economic uses and contemplates dealing with them in the most common sense way under each set of local conditions. This is about the viewpoint that I have arrived at. I would like to get a general expression of Service opinion as to whether this line of thought is on the right track. Let us hear generally from the readers of the Service Bulletin.

WHY IT HAPPENED IN DISTRICT I

By H. T. Gisborne
Northern Rocky Mountain For. Exp. Sta.

The Service Bulletin of September 6, 1926, carried an excellent description of "What Happened in District I" during the past fire season. Some of the causes of this effect stand out rather clearly in the weather records obtained at the Priest River Experiment Station, which was all too close to the 18,000-acre Quartz Creek fire on the Kaniksu Forest.

No snow on the ground on March 15, 1926, gave the season a flying start compared to the normal of nine inches at that time. April, with only 36 per cent of normal rainfall, and a mean temperature 5.3 degrees above normal, further hastened the development of high inflammability, and prevented the heavier fuels from soaking up a good supply of moisture to last into the summer. By the end of April these fuels were far drier than at the same time in 1925, as shown by the following comparison:

Last week in April	Full layer of duff	Slash	Outside ½ inch wood from windfall	Inner 2d to 3rd inch wood from windfall
	Moisture Content in Per Cent			
1925	320	127	150	137
1926	114	20	42	37

May brought almost normal weather, but a normal May on the Kaniksu does not make wetter fuels, as shown by the fact that on June 1 the full duff had only 10 per cent moisture content, slash had 14 per cent, outside half inch wood on a windfall 25 per cent, and the inner wood 30 per cent. Dead weeds, twigs, and the top layer of duff were highly inflammable by that time.

These conditions marked the beginning of a 77-day fire season, with only 3 days when fire would not spread freely on the open and cut-over areas, and with only 10 days when there was no danger of spread on the fully timbered lands. From June 25 to August 16 there were 53 consecutive days of uninterrupted danger of rapid spread on all exposures. During this period the average maximum temperature was 86.0°F, the average 5.00 p.m. relative humidity was 26.6 per cent, and the average wind velocity from 6 a.m. to 6 p.m. was 6.7 miles per hour.

From June 25 to July 5 the final factor in danger -- the causative agencies -- was missing, however, and the Kaniksu sold timber as usual. In so far as number of fires was concerned this was a period of no danger. On July 5 and 6 came thunderstorms, expected by the Experiment Station the afternoon of the fourth, and predicted by the Weather Bureau the morning of the sixth, causing over 60 fires on this Forest. A total of 0.09 inches rain was recorded at the Experiment Station. For the next seven days the average maximum temperature was 93.1°, 5.00 p.m. humidity 27.3 per cent, and 6 a.m. to 6 p.m. wind 5.4 miles per hour. All fires were on a patrol basis the morning of July 12, with only one or two of the 60 over 10 acres in size.

Then came July 12 with its entirely unpredicted and unprecedented electrical storm. Only 0.04 inches of rain fell at the Experiment Station, and over 200 fires were started on the Kaniksu. At about midnight of the 12th, the electrical display was sufficient to permit the driving of cars without headlights. And they were not cloud-to-cloud flashes.

For the next seven days the average maximum temperature was 85.1°, average 5.00 p.m. humidity 18.4 per cent, and average 6 a.m. to 6 p.m. wind velocity 10.9 miles per hour. The peak was reached on July 18 n the airplane survey reported every uncontrolled fire "blowing up". There was a 16-mile wind most of the afternoon that day, the minimum humidity was 13 per cent, and the maximum temperature 82°. To indicate the severity of the seven-day peak, it is interesting to cite Geo. H. Cecil's article, "D-6 In Its Hour of Trial" published in the Service Bulletin of Agust 7, 1922, and the Hofmann-Osborne bulletin "Relative Humidity and Forest Fires". Mr. Cecil described the summer of 1922 as one of the worst fire seasons ever experienced in District 6. Hofmann and Osborne published the temperature, humidity, and wind data for a seven-day period of that season, during which "there was probably more acreage burned over and greater damage sustained than during the entire balance of the season".

The records for this seven-day peak in D-6, and the recent seven-day peak in D-1, compare as follows:

	Ave. maximum temperature	Relative Humidity		Average wind velocity 6 a.m. to 6 p. m.
		Ave. minimum	Ave. at 5:00 p.m.	
D-6	80.9	19.0	25.3	5.8
D-1	85.1	17.0	18.4	10.9

Following July 19, 1926, there came a general let-up in D-1, with only a few bad days, as follows:

	Maximum temperature	5:00 p.m, Rel. Humidity	6 a. to 6 p. average wind
July 26	88	26	10
27	80	23	11
31	87	28	13
Aug. 4	80	23	11
9	84	36	11

Several of the larger fires were permanently corralled, even under these conditions, and on August 17, 18 and 19 heavy rains did the rest.

AN AFTERNOON AT THE DISTRICT 2 TRAINING CAMP

Roy Headley, Washington

A good natured bunch of young fellows left the camp after noon and wandered off through the beautiful pine woods on the gentle slope back of Camp Colorado where 14 men, mostly from the Ranger eligible list, are being prepared to take charge of Ranger districts. "Mr. Kep" calls on first one and then another to say which of two trees is making the better growth. Then another man is asked to find another tree which shows more growth than either of the first two. Another man is asked to locate a tree which is making poor growth and could come out. Such problems are brought up for a quarter of a mile of easy travel through the Manitou Forest owned by Colorado College, which has loaned its camp and all facilities for the use of the D-2 training camp.

Opinions advanced are based on the different signs of good or poor growth which the bunch have been learning to recognize under the guidance of "Mr. Kep" and Rangers Mahan and Wright, his two helpers. All opinions are proved to be right or wrong with the increment borer, which one of the men thought was a relative of the dendroctonus before he came to the camp. Men are expected to judge growth of individual trees by the visible indicators of growth and these judgments are checked by the borer.

Suddenly a man remarks in doleful tones "There's where my stock goes down again". He has seen a lot of trees ahead with white tags tacked on them and from previous experience knows what this means.

"Mr. Kep's" apparently aimless rambling has ended up at a strip of timber which a marking board had previously tagged and classified for cutting. One hundred trees have numbered tags tacked to them breast high.

Each man prepares a sheet on which he is to indicate whether he would cut or leave each of the tagged trees. The men then move down the slope peering at the tops of the trees like a crowd of nature lovers out on a bird walk. There is no conversation. Now and then a man will ask some one to tell him the number of a tree at which he is peering from a distance, but each man is intent on his own business of selecting for cutting the trees which are making the poorest growth and of leaving the most thrifty.

At last the trees have all been searched for outward evidences of rate of growth, the men have recorded their decisions on each tree, and have handed in duplicates of their slips. The Assistant Forester with outward calm but inward trepidation hands in his also. He remembers how low a mark he got in a previous case and fears he will not pass.

Then the noise begins. Keplinger reads from the record of the marking board the number of each tree and whether their decision was to cut or leave. Each announcement is followed by loud cries of "check" from those who agree and louder protest from those who "missed". Men who missed are always ready to wield the instrument borer to prove that the marking board was wrong. Often they made it stick too. "Doc" Cochran had designated less trees for cutting than the others and he was continually wielding the borer in an effort to prove that a tree designated for cutting by the board was actually putting on good growth and should be left. Sometimes he merely convinced himself that the growth was poor and the tree should be cut but frequently he proved his point and "Mr. Kep" would announce that on the basis of the proved growth being made, the board would have to be reversed and the tree left, whereupon came cries of rage from those who had listed the tree for cutting. Cochran bacame very unpopular and at the wash house that evening he was forced to wait his turn until all the others were through.

Interesting work? Yes. Great fun? Emphatically. And a lot more than that. There may be better ways of cultivating the art of marking which lies so close to the heart of American forestry but I haven't heard of them. Probably most experienced officers of the Service would be glad to have a similar opportunity of matching wit and skill with each other in the same way.

The newly appointed members of the Forest Service family at "Mr. Kep's" camp say that the sort of training they are getting is the best thing the Forest Service has ever done. More than half of them have had four years of College forestry and they say "they tell us in school to leave the thrifty trees but they don't tell us how to distinguish them". Keplinger's methods are his own --- evolved from years of study, trial and error, and trial and success. In the four weeks of the camp 84 jobs of a District Ranger are done - not merely talked about. The list includes every sort of thing from digging garbage pits to the theory and practice of marking in tricky stands of timber. If it is something a District Ranger needs to know how to do "Mr. Kep" teaches it - or rather lets the men teach themselves.

It is not complete or thorough naturally. It is a good start for the new man. The Supervisor to whom a new man is assigned is expected to spend a couple of weeks introducing him to his job and following up what Keplinger has started. At every step of the work in the camp the men are helped to get the invaluable techinque of intelligent reference to the manuals and other books which constitute the managing forester's working library. No wonder the D-2 Supervisors are so positive in expressing their confidence in new District Rangers who have been through Keplinger's camp.

PROTECTING A GREAT NATIONAL ASSET

Alarmed by the menace of the year's forest fires, a group of business men and forestry advocates identified with the forest industries of the nation, but chiefly with those of the Pacific Coast States and Idaho and Montana conferred with President Coolidge and Director of the Budget Lord on October 7 concerning measures to be taken to protect the forests against fire and to promote reforestation.

The delegation was organized through the initiative of the Western Forestry and Conservation Association, Portland, Oregon, E. T. Allen, Manager; and President A. W. Laird of that organization acted as chairman and spokesman.

Both the President and General Lord evinced understanding of and sympathy with the purpose of the interview, which the latter said was very opportune, because the items involved were before his office on that day in preparation of the next budget. The President's remarks indicated that the appropriations in question would be increased, although it was not understood whether the full amount asked for would be granted.

It was explained to the President that the five States contain half the standing timber of the nation; of which the Federal Government owns 68 per cent by potential merchantable timber acreage and 62 per cent by the entire area of forest land; and 42 per cent by the volume of timber actually merchantable now.

This inestimable national asset is inadequately protected from fire, it was explained, because the Federal Government is not holding up its end of the necessary expense and is not meeting the obligations it imposed on itself by the Clarke-McNary National Forest policy law. The whole policy of this reforestation plan on the basis of cooperation between the Federal Government, the States and private owners is threatened with collapse, because the Government is not living up to its contract to appropriate money for fire suppression up to $2,500,000 annually, provided $7,500,000 were appropriated by other agencies. The latter are now spending $3,775,000, but the Federal Government is "coming through" with only $710,000, instead of $1,250,000 annually, and is contributing practically nothing on account of its ownership of public domain timber lands outside the National Forests.

Moreover, the business men explained to the President, the National Forest Service is not properly and rationally financed for fighting fires on the National Forests themselves. Annual appropriations for this purpose are so small that they are devoted in practice to suppressing rather than preventing fires. They are not sufficient to succeed in either direction, with the result that mistakenly small regular appropriations are frequently followed by fires that get out of hand and are finally extinguished at excessive cost, met by deficiency appropriations. - News Release by National Lumber Manufacturers Association.

FOREST FIRES AND THE HUNTING SEASON

The following table is self-explanatory:

MAN-MADE FIRES

Year	Total Fires	Total To 9-30	Number After 10-1	% After 10-1
1925	102	82	20	19.6%
1924	466	421	45	9.6%
1923	95	76	19	20.0%

The fires after October 1 are doubtless very largely hunters' fires, their neglected camp fires, smokers' fires, etc.

This is a very considerable number of fires, and a number that should be very much decreased. Were it not for the hunting season for big game, it seems probable that nearly all of these fires after October 1 would be eliminated. As it is, the United States is suffering a considerable loss and expense on account of the open season for big game on the forests. Largely because of this open season, we now have on one forest in the District six guards, whose services it is believed could properly be dispensed with otherwise. We have an important task here in eliminating this loss and expense. It is hoped that this can be done without making necessary the closing of areas against hunting during the season the State laws allow it. Certainly we must take steps to insure a better record in the matter of man-made forest fires during the hunting season. - District 4.

BOY SCOUTS RIDE THEIR OWN FIRE TRUCK

Boy Scouts of Glenbrook, Conn., ride to forest fires on their own fire truck. In the July Wooden Nutmeg Frank Van Iderstyne, Deputy Scout Commissioner, writes as follows of their work this year:

"The Glenbrook Scout Troop has put out 22 fires this season. The district firewarden has not been present at any of these. While practically all of these are marked 'Grass Fires' they were fires in the edge of the woodland, and if the boys hadn't patrolled and put out these fires quickly, considerable woodland in this district would have been burned. In fact, several woodlands around Darien have been burned every year; but this year the Scouts stopped the fires at the edge. The Police Department of Darien asked us to put out a fire that their fire department had fought for five hours, and with our equipment and scouts, in one hour we had the fire under control.

"This little apparatus is admirably suited to the work. We can go where fire departments cannot, and if we find water enough for a dipper we can use our pumps.

"Mr. Irving who furnished the truck made a good investment. We saved his woods twice. I have a letter from a Mr. Moore thanking the scouts for saving his house and garage.

"The boys have answered most of these calls alone, and handle the work like veterans."

MAD COW SCARE

There has been a mad cow scare up Santa Fe Canyon, states the Santa Fe News. About five cows have been killed so far. Ranger Pinson reported that he drove a cow and calf up an arroyo and sent for their owner, who came and put a bullet through the head of the cow and calf. Then Ranger Pinson and the owner started back down the canyon. After going a considerable distance they heard a cow bellow in the direction from which they had come, and going back met the cow coming after them. The owner put his remaining four shots into the head of the cow, and finally they resorted to rock before killing the cow. The calf is said to have also come to life and acted in a like manner. While driving cattle out of the canyon Albert and Verlyn Pinson had some of the froth from a cow's mouth blown across their faces, getting into their eyes and mouths. This was reported to the county health doctor who with other doctors in Santa Fe decided that Albert and Verlyn should take inoculation against hydrophobia. They have taken seven shots out of the fourteen required. It is reported that several cows have also had to be disposed of at Agua Fria. - District 3.

EXHIBITS AS A FINE ART

From laconic official report on D-5 exhibit at the Ventura County Fair: "Painted background showing green forest and burned forest; fronted by natural accessories and enclosed by cage 10' deep and 10' high divided in two sections; the green forest section housing 25 live quail and pair of wood ducks, and containing a pool and running stream with live fish; the burned forest cage containing deer skeleton and two live turkey buzzards. 10' deep 70' long."

ADVICE TO BEGINNERS

In his address at the annual prize distribution of the Burma Forest School, Mr. H. W. A. Watson, Chief Conservator of Forests, said in part:

"Life in the Forest Department is different from life in other Departments. In a way the forest officer has more hardships, as men brought up in towns measure hardships; but to a man who takes an interest in the forest, and only such men should join the Forest Department, the life is full of interest and far preferable to the possibly more comfortable conditions in other walks of life. The main thing is to take an interest in the forest and in the work being carried out for its development and to think out the reason of everything that is being done. A man who tries to carry out orders without understanding them is a bad kind of slave and never likely to rise in life. Good and intelligent work is necessary for progress and especially necessary in the Forest Department.****

"Practical work is very necessary and the more you get of it the better. No man can expect to manage labour properly unless he himself is competent to take a hand in the work. A man who can do a job of work such as felling a tree or blazing a tree as well as the casual labourer he employs gets the best work done, whereas the intelligent labourer takes little interest in and works badly for any unpractical man that tries to supervise him. There is nothing undignified in manual work. It is good both for the body and for the mind. I mention this as I have heard murmurs about the arduous practical work and can only say that the more arduous and more practical it is the better for all concerned in every way. You can never learn how to do a job of work by reading how it should be done or how to manage labour by reading books." From September Indian Forester.

NATIONAL FOREST SHEEP JOIN THE COMMUNISTS.

On Monday morning (Oct. 4.) Will C. Clos, who had the honor of being the pioneer range management expert of the Forest Service, telephoned from Baltimore that he was at that point with 1,600 sheep en route to Russia. Part of the sheep are from the well known Seeley, Sandalin, and Mattson herds of Utah, but some are from Wyoming and 200 head were picked up in Ohio. They were to be loaded Wednesday with the expectation that the ship would sail Wednesday night, so that while Mr. Clos was keenly desirous of again meeting his old associates he was fearful that he could not spare the time for a trip to Washington and therefore resorted to the telephone. The sheep are being arranged for by an organization which plans to distribute them among Russian farmers and supervise their subsequent management as a means of promoting the industry in Russia. The organization has asked Mr. Clos to agree to remain in Russia for a year, to direct the handling of the sheep, but as the contract can not be executed until he reaches Moscow Clos was uncertain as to whether the conditions would be acceptable to him. The trip will require 28 days and will take Clos through parts of the Mediterranean and Black Seas and many other interesting places. - L. F. K.

CAESAR'S WIFE

Three Forest officers left ....at 4:00 P.M. for a Ranger Station across the mountain, in a Forest Service Ford. As they ascended the side of the mountain they noticed smoke in the valley. A quick descent showed that the smoke was at a house where trash was being burned. This fire was being carefully watched. They started up the hill again at 4:15 and ten minutes later saw another smoke in the valley. This time there was a small fire along the road over which they had passed only 15 minuets before. Evidence showed that the fire was started by a smoker. The only people who had passed over the road after 4:15 were the Forest officers, who noticed no fire when they passed and had NOT been smoking, and a pedestrian who admitted that he smoked while walking up the road. He is now on the way to the Judge.

How different might the story have been, though, had not the Forest officers lived strictly up to the "NO smoking in the woods" rule. Does it pay to be above suspicion!

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BLOODY BUT UNBOWED

D-1 Gets a Message from the Chief

Ten days of skating around the edges of the Northern Idaho and Montana fires during the middle of August give me small warrant for any weighty comment upon the tough job District One has had upon its hands this year. But I cannot refrain from expressing my tremendous admiration for the spirit and grit of the men who bore the heat and burden of the long fight. I wondered how they stood up under the strain of fatigue and responsibility; - and I wish there were some way whereby the Government could fittingly recognize and reward public service of so fine a quality. The whole District men and women, office staffs and supply staffs, transportation personnel and leaders on the fire lines - met the emergency with a wonderful display of the fine Forest Service spirit of loyalty and determination and resourcefulness. No one could help being proud of such an organization. District One's response to the critical situation has been the best kind of an answer to the critics who have charged the service with failure to put all that it has in brains and energy and physical endurance into the protection of the National Forests.

A season like 1926 was almost bound to bring a lot of fires and heavy losses. Notwithstanding the drouth conditions, the record of the year in District One has much in which we may justly take pride. But for blazes caused by lightning, the losses would evidently have been small. The number of "fire Forests" which kept on top of the situation from start to finish and had no bad fires is certainly gratifying. The way in which the Kaniksu force rounded up its first peak load of lightning fires and a large proportion of its second unparalleled deluge of strikes is a wonderful record of good organization and planning. And the subsequent successful attack upon the thirty or more large fires in this one Forest, under all the difficulties, will stand out in Forest Service annals as a mighty fine piece of work. The same is true of the long and arduous campaign on other Forests.

Discouragement over the losses incurred in years like 1926 and 1919, not to mention 1910 when we were much more poorly organized and prepared for an emergency, is natural enough. We all feel it at times like this. But we must recognize that we have in the Western United States, with their still largely frontier conditions and hazards of old burns and snags and slash on top of their arid summers, the most difficult task of protection that any forest organization ever tackled in the history of the world; that it is going to take time - probably a long time - to work it out; and that in these pioneer stages of the job the main thing is to make progress from year to year in the ways and means of fire prevention and first line control and the technique of fire suppression. I am satisfied that we are making progress steadily.

Otherwise 1926 would undoubtedly have been a second, - if not more disastrous - 1910.

Of course we all know there is still plenty of room to go. For one thing, I am satisfied we must drive hard for better fire prevention and control through physical improvements, such as "Ways" to form a rudimentary network of fire lines and the aggressive removal of recognized hazards; and I am ready to go to bat for a larger protection organization where the losses of this year show its need. Above all, we must hold the spirit and determination to see our fire job through, whatever time it may take and whatever obstacles lie in the path

District One has built up a fine tradition for "getting" its fires, however prolonged the siege. We must hold to that through thick and thin. And you may rest assured that the whole Service will back up District One on its critical sector of the front with all the resources we can command. (W. B. Greely in D - 1 Bulletin)

THE KAIBAB DEER IN COURT

By Will C. Barnes, Washington

Referring to the present friendly suit between the United States and Governor Hunt of Arizona concerning the disposition of the surplus deer in the Grand Canyon National Game Preserve, the following interesting and pertinent extracts are taken from the brief filed in September by Mr. Williams, Solicitor of the Department, in the United States Court for the District of Arizona sitting in Los Angeles. The three judges are now studying the papers. The Forest Service and the Solicitor believe that there is no legal justification for the claim made by the State of Arizona that it as a sovereign State is sole owner of the deer:

"This is an erroneous conception of the law", says the Solicitor, "State ownership is generally referred to by the courts as a mere fiction evolved for the purpose of preserving the game. It is based upon the obvious fact that the State is the best trustee of the game because it is able to protect it. But, as pointed out by Justice Field in his dissenting opinion in Geer v. Connecticut, 161 U. S. 519, wild game belongs to no one until it is reduced to possession. The State has not reduced wild game to possession and therefore does not own it."

Justice Field's opinion in this case reads in part: "But on the contrary, I hold that where animals within a State, whether living in its waters or in the air above, are, at the time, beyond the reach or control of man, so that they cannot be subjected to his use or that of the State in any respect, they are not the property of the State or of any one in a proper sense of the word."

The Solicitor says: "The police power, and not ownership, is therefore the basis of the State's general control over wild game."

In the majority opinion in the Geer v. Connecticut case the following statement is made by the Supreme Court: "The right to preserve game flows from the undoubted existence in the State of a police power to that end, which may be none the less efficiently called into play, because by doing so interstate commerce may be remotely or indirectly affected.

"This is quoted by the court in Sils v. Hesterberg, 211 U. S. 31,41.

"Later decisions of the Supreme Court recognized that State ownership is only a fiction. In Missouri v. Holland, 252 U. S. 416, 434, the court said:

"'To put the claim of the State upon title is to lean upon a slender reed.'

"'In McKee v. Gratz, 260 U. S. 127, it said that statutes declaring title in the State speak only in aid of the State's power of regulation, - in other words, its police power. The language of the court is:

'"It (the Circuit Court of Appeals)

rightly, as we think, held that the statutes declaring the title to the game and fish to be in the State spoke only of the State's power of regulation and left plaintiff's interest what it was before. See Missouri v. Holland, 252 U. S. 416, 434.'"

Continuing along this line the brief states: "Not only is the State without title to wild game but its police power is, of course, subordinate to legislation by the Federal Government in the exercise of its constitutional powers. The Supreme Court of the United States has carefully guarded its expression regarding the State's control over wild game and has expressly qualified it by saying that although the State possesses the right of control as between itself and the citizens, it must yield to a valid exercise of power by Congress. The language of the court in the several cases is set out below:

> "'It is not to be doubted that the power to preserve fish and game within its borders is inherent in the sovereignty of the State (GEER V. CONNECTICUT 461 U. S. 519; WARD V. RACE HORSE, 163 U. S. 504, 507), subject of course to any valid exercise of authority under the provisions of the Federal Constitution. ** *** (KENNEDY V. BECKER, 241 U. S. 556,562, 564).'"

Further, the brief quotes from GEER V. CONNECTICUT, decision of the same court, as follows: "It is admitted that, in the absence of Federal legislation on the subject, a State has exclusive power to control wild game within its borders *** (GEER V. CONNECTICUT, 161 U. S. 519; CAREY V. SOUTH DAKOTA, 250 U. S. 118, 120)

Whatever may be the decision of the three District Judges who heard this case at Los Angeles, the wording of the brief proves conclusively that the Solicitor and his Assistants have gone into the case with great thoroughness and care, and have supported their argument as federal control of the Kaibab deer with quotations from court decisions both of the Supreme and District Courts which seem absolutely convincing.

WHAT HAPPENED IN D - 6

By A. O. Waha.

The fires that caused us the most concern were set by lightning, and were located in the high country where the timber is covered with moss. When the humidity is low, fire will travel in the crowns of moss-covered timber even if there is snow on the ground. But when the ground cover is moist, the chance of a fire developing into a crown fire usually not great. This season the ground cover was as dry as tinder even in the high country. Rangers who had the experience of having fires go out when they struck green cedar flats found this year to their amazement that cedar flats burned just as intensely as the timber on slopes. Moss on fallen trees burned readily because it was thoroughly dry when ordinarily it is moist enough to stop a fire. Oregon grape and other green shrubs burned like dry sticks. Back firing without the use of a Hauck torch was not uncommon.

To be sure, the period of drouth was a long one -- 58 days -- from June 19 to August 17. Yet in 1925, the drouth extended for 60 days. The essential difference then between the 1925 and 1926 seasons was the comparatively light snowfall in the winter of 1925-26, and the extended periods of low humidity without breaks in 1926. The season of 1925 was serious enough -- in fact on some forests the number of fires, damage incurred, and costs of suppression were greater than in 1926, but in is true that there were more breaks in the 1925 season, which aided materially in the control of fires. No such breaks occurred during the 1926 season except for several days previous to the termination of the drouth by rains on August 17. It was not uncommon for fires to crown as early as 5 o'clock in the morning and as late as 10 o'clock at night. Daily winds added to the difficulty of control. The bringing under control of all fires except two previous to the first rain is in my opinion an outstanding accomplishment, and is indicative of noteworthy progress in fire fighting technique.

Out of a total of 662 lightning fires to September 1, 484 occurred during the period July 1 to 12 inclusive. Two extraordinarily severe dry electrical storms on July 5 and July 11 were responsible for this unusually large number of fires.

For the most part the fires resulting from the July 5 storm were promptly detected and controlled, but the smoke from these fires had not cleared away when the July 11 storm occurred. Visibility was poor and some fires had gained considerable headway before they were located. This was especially true in the Colville and Chelan, both of which experienced the worst fire season they have ever had. The Colville had 77 lightning fires from the two storms of July 5 and 11 while the Chelan got 40. While excellent work was accomplished by the local forces in getting many of the fires before they developed into Class C's, it was inevitable that some reached large proportions. Most of those that were difficult to handle were located in the high country, and especially on the Chelan quite a number of the larger fires were in the most inaccessible part of the Forest. Had all of the lightning fires been detected shortly after they were set, I am sure that our record in northeastern Washington would have been much better. If after the first storm of July 5-6 all fires had been detected promptly when the visibility was fairly good, it is certain that a number of the larger fires that were fought all summer might have been controlled while still relatively small. Unfortunately, quite a number of the lightning fires did not show up sufficiently to be detected until several days after the storms, and when detected they were already big fires. The big fire on the upper Skagit River in the Mount Baker Forest is a notable example, for when this fire was first seen four days after the storm it had probably covered more than 100 acres. This proved to be one of our most serious and costly fires and burned a larger area than any other fire in the district. It occured high up on a precipitous slope. To reach the fire from the creek bed required nearly two hours. The fire was not a great distance from the nearest lookout, but an intervening mountain made detection impossible until the fire got well under way and threw up much smoke. The fire was claimed to have been under control at least three times when it had covered less than 500 acres, but adverse wind and humidity conditions, together with the excessive roll on the steep slopes caused lines to be lost and the fire then traveled rapidly in country where control without favorable breaks in weather was humanly impossible.... The costs of suppression for this season on the Mount Baker total approximately $46,000 and besides the large fire in the upper Skagit country, there was only one other serious fire. This was a man-caused fire and was reached when it was less than an acre, but before it could be controlled it had gained headway on the precipitous slopes and shortly after became a serious conflagration and burned over more than 5,000 acres. This fire too might have run wild had not a favorable break in the weather occurred.

NUMBER OF FIRES AND CAUSES.

To September 1, 1361 fires were reported, of which 189 were Class C's. This is a larger precentage of C's than in 1925, but the number of C fires that burned over 5,000 or more acres in 1926 was much larger than in any previous year. The percentage of fires caused by lightning during this season is 49 which is above the 5 year average but 12% less than in 1925. But here again, the lightning fires were the most serious this year, costing considerably more and doing greater damage than usual.

Notwithstanding the smoke laden atmosphere in the forested country which doubtless kept many visitors away from the forests, and in spite of the great amount of publicity given to the forest fire situation, not to mention the closing orders under Reg. T-1, (I), which affected nearly 4 million acres, and the prohibition of smoking under Reg. T-1 (H), affecting approximately 400,000 acres, the number of smoker fires was 225 or 11 more than in 1925, and the camper's fires totaled 199, which is 68 less than in 1925. We can, of course, expect more fires of these classes before the end of the season, on account of the hunting season. Brush burning fires were not quite so numerous, but comparisons at this date may not mean much, since ordinarily fires from this cause are about as common in the fall as in the spring.

It was a most admirable season for the incendiary -- conditions for burning could scarcely have been more favorable. On the Umpqua alone, 50 fires are attributed to incendiaries. The total for the District for the season is 78 as against 28 in 1925. Public sentiment in Douglas and Jackson counties is thoroughly aroused, the Jackson county court is offering a reward of $500 for the arrest and conviction of any incendiary, the State Forester of Oregon likewise has offered a similar reward; our law enforcement officer has been circulating in the incendiary country for several weeks, doing what he can to secure evidence and build up a case -- out of it all we rather feel that conditions will improve. One of the bright spots in the season was the appreciable reduction in fires caused by lumbering operations; there being only 18 as against 33 in 1925. To offset this, however, the number of fires caused by railroads was almost double the number of such fires in 1925. Of the 81 fires from this cause, 43 were in the Mount Hood along the Union Pacific. Because of the double speeder patrol maintained by the Company and the effective communication system for reporting fires promptly to the Forest Rangers, none of these fires were serious and the expense incurred by the Service in assisting in their suppression was nominal. The fire truck which is equipped with a tank, pump and hose, and kept at one of the stations on the Columbia River highway has been found most effective in handling these railroad fires.

Area Burned

Approximately 122,000 acres of National Forest land have been burned over during this season, or more than 3 times the acreage of 1925 fires. Including the private lands inside of the Forests, together with contiguous outside lands which were burned over, brings the total of burned acreage for the season up to 185,000.

The area of National Forest lands burned over on the Colville, Chelan, and Mount Baker is approximately 93,000 acres or about 75% of the total National Forest land burned over. The fire suppression costs on these three Forests amount to nearly 60% of the District total.

Usually our largest fires are in old burns but during this season, this type was comparatively free of any bad fires. For a while, one of the large areas of old burn on the Columbia was seriously threatened, but due to the prompt action of three pumps, together with a favorable shift in the wind, the fire was kept out of it. Had that fire got away, our acreage figure for fires would doubtless have been increased by 30,000 and district costs by $25,000 or more.

Costs

The costs to September 1 have been estimated at $366,027. This represents about $150,000 more than was expended in 1925, about $50,000 more than in 1924; about $320,000 more than in 1923, our most favorable season in recent years, and about twice the amount of the 5 year average F. F. expenditures for 1918-22 inclusive. The reason for the high costs is readily explained. Not since 1910 have we had so many going large fires at one time, and, because of the extended period without favorable breaks in the weather, larger numbers of fire fighters were employed and for much longer periods than is ordinarily the case. The maximum number of fire fighters employed on the Colville during the worst part of the season was 450, the Chelan had about 400 for most of the season, and the Mt. Baker had an average of about 200 during the season. Several other Forests had to employ 100 or more men rather for extended periods.

Damages

Only very rough estimates of damages can, of course, be made at this time. Confining the damage to National Forest lands, it is estimated that 550,000 M. B. F. of timber valued at $675,000 was destroyed.

SUPERVISOR RICHEY'S DEATH

With deep regret we announce the sudden death of Alv~~e~~a L. Richey, in Washington, on October 16. Mr. Richey had just come here from his post as Supervisor of the Superior on his way to New Orleans to take up his new work of District Inspector under the Clarke-McNary Law in the Gulf States. He had attended a party in honor of the visiting State Foresters the evening of the 15th and was found dead in his room early in the morning of the 16th. He had suffered from heart trouble for the past year, brought on probably from the heavy back-packing necessitated by canoe travel on the Superior.

Mr. Richey entered the Service in June, 1911, and because of his ability and attractive personality had had a most successful career, being regarded as one of the best Supervisors in District 2, and having as a result advanced to the responsible post in the South. He was 45 years old and is survived by Mrs. Richey and three sons.

CHUGACH HAS NEW MOTOR BOAT

By L. C. Pratt, Chugach.

Culminating efforts to give the Chugach National Forest a suitable motor ship for work in Southwestern Alaska, efforts which have covered a full decade, the new motor ship CHUGACH was put in commission on August 12, just ten years after the old Restless went out of service.

From the spring of 1917 until the fall of 1926, a full ten-year period, the Chugach National Forest had been without a service -owned boat, and it had been necessary to depend entirely on chartered craft. Consequently, the work of the Service was done in every manner of craft -- skiffs, dories, fish boats, anything and everything that would stay afloat.

Now, thanks to concerted effort from the lowliest Forest officer on the Chugach right up the line to Forester Greeley, the Chugach has the finest boat of its size in Alaska.

The new boat CHUGACH is 60 feet long has a beam of 14 feet, draws about six feet, is powered with a 75 h.p. Atlas deisel engine, develops a working speed of nine knots, and has comfortable accomodations for eight. She is comfortable and seaworthy and especially well adapted for the exposed waters of Southwestern Alaska.

The boat was built by the Lake Union Dry Docks and Machine Works of Seattle last winter. Upon completion of the hull she was towed to the Forest Service marine ways at Ketchikan by the B. P. R. boat HIGHWAY. Here she was hauled up to await such time as funds could be procured for the engine. Money for this purpose became available early in the spring of 1926 and the work of installing the engine and putting on the finishing touches was hurried along.

The task of financing the new boat, which involved approximately $25,000, was one that taxed the Service sorely. District Eight gave until it hurt. At the eleventh hour, almost after hope had been abandoned for completing the boat during

during 1926, the Forester dug up an additional $10,000 from some secret hiding place, and it became possible to purchase and install the engine.

That, however, represents only a part of the financial story. The balance involved some expert "hoss" trading by the District Forester's office at Juneau.

At the end of the war the Navy Department turned over to the Forest Service, for use in Alaska, two crafts which had formerly been private yachts but had been acquired by the Government during the war. One of these was the Hiawatha, an exquisite craft 98 feet long and 16 feet beam. She was built in 1914 for G. W. Todd of New York, and was everything that a wealthy yacht owner might desire. Finished throughout in mahogany and teak, with shining brass, deep upholstry and polished decks, she was a sight for sore eyes.

It soon developed, however, that she was more or less a white elephant. From the standpoint of the Service, her weakness and impracticability lay in the fact that she was powered with two 80 h.p. 6 cylinder high speed motors. She was a hog for fuel. Pouring gas into her tanks was like pouring water into a thirsty mastadon--an endless job. Her gas consumption was approximately 20 gallons an hour, and it was out of the question to operate such an expensive boat.

By special act of Congress the Service was authorized to trade this boat as part cost for a more practicable craft. She was thereupon towed to Seattle and offered for sale or trade. After extensive advertising in yachting circles on the Pacific coast, and endless dickering, she was traded off, the tradee agreeing to build a 60-foot hull according to specifications furnished by the Forest Service.

A last word about the Hiawatha: The new owner promptly took the old engines out of her, installed new ones, refitted her, and she is now one of the finest yachts in northern waters. She has won more than one race, and during the present summer has been cruising in Alaska with her new owner, having been rechristened Winifred II.

The new CHUGACH was designed by L. H. Coolidge, naval architect of Seattle, the plans being based on suggestions furnished largely by Forest Supervisor W. J. McDonald of the Chugach, who has had 15 years boating experience in Southwestern Alaska. Lyle W. Blodgett, veteran port captain for the Forest Service fleet, with headquarters at Ketchikan, camped on the trail of the builders. Consequently, nothing but the best of material and workmanship went into the hull.

Forest Ranger E. M. Jacobsen of the Chugach went to Ketchikan last spring and assisted with the installation of the engine. Supervisor Zeller and his headquarters force handled the fiscal end of the work and lent every aid to get the boat in commission as early as possible.

The boat was brought from Ketchikan to Cordova during the latter part of August, the nearly 1000-mile voyage being made in four days. Ranger Jacobsen, who is an old deep water sailor, is skipper. At present the boat carries a crew of three, skipper, engineer, and cook. It is planned, however, to carry regularly a crew of only two.

The CHUGACH uses 3½ gallons of deisel fuel oil per hour, the fuel cost being slightly more than two cents a mile as against 60¢ a mile for the Hiawatha.

Visiting officers coming to Alaska "to gather first-hand information" will now have a comfortable means of giving the Chugach Forest the "once over."

PARDONS ADORN COFFINS OF FIRE HERO CONVICTS

State buildings and all business houses were closed in Carson City on October 1 for the double burial of George Brown and J. E. Mitchell, state prisoners burned to death battling the forest fire that imperiled that city.

In their coffins were their pardons, dated the 27th of September, the day before they were killed. The pardons were issued on October 1 by Governor J. C. Schrugham, as the state's tribute. -- District 5.

NEW MEXICO NATURE NOTE

"A prairie dog was seen four feet in the air during a heavy sand storm digging and clawing to get back to the ground" - Manzano Ranger. (California papers please copy)

SALMON RIVER TRIP

Messers. Morse and Swartz have returned from their trip down the Salmon River by boat. They left Salmon City on September 6, and Shoup on September 8. They arrived at Riggins, which is about half way, on the night of September 22, reaching Lewiston on the morning of September 28.

They state that the river trip is a wonderful one for fishing, and also for scenery, not to mention the thrills one gets in shooting the rapids. Most of the fishing done by Messrs. Morse and Swartz was in the mouths of streams going into the main Salmon. The main Salmon River contains a lot of big fish, such as sturgeon, salmon, etc., as well as trout and smaller fish. Mr. Morse is of the opinion that the fish in the main Salmon must have seen them coming, as they had very poor luck. Very little game was noticed along the river at the time the trip was made on account of it being too early in the season. However, four elk, four deer, three mountain sheep, and three mountain goats were observed.

The men looked over as much country as they could on the trip down the river. They found that all of the timber is back from the river. The river banks all the way through are rock lined and the greater part of the way it is practically a box canyon affair. As a driving proposition, it is their opinion that it will be a long time at least before logs will be driven down the main Salmon River.

The private party who started out with Morse and Swartz, left them at Riggins because they were under the impression that all the thrills of the trip were over. But as a matter of fact, Morse and Swartz found that for a considerable part of the distance between Riggins and the mouth of the Salmon, there were bad rapids, bad eddies, extremely rough driving, water where logs would be severely broomed and where driving would be a very expensive proposition on account of hanging up in the bad eddies and where there would be a very heavy loss from deadheads. The lower Salmon River is impracticable as a driving stream.

The two boatmen who accompanied Morse and Swartz have had a good many years of experience in running freight boats down the Salmon River. One has been on the job for seventeen years, and the other for ten years. They said that on account of the extremely low water, more rocks were struck on this trip than in all their previous trips put together. - District 4.

THE LOOKOUT TOWER

Thorton Munger, Director of the Pacific Northwest Experiment Station sends the interesting news:

"In the Service Bulletin of September 20 in the column "Lookout Tower" is the question, Who knows of hardwood species used among pines for firebreaks? It may be of interest to know that Capt. John Woods of the Long-Bell Lumber Company has been considering the use of hardwoods as firebreaks in the logged-off lands of his company at Ryderwood, Washington. He has already done some experimental planting of firebreaks on these Douglas fir lands with Oregon alder, willows and black cottonwood. His method is to plant a double row of hardwoods along the abandoned railroad spurs. The trees are set four feet apart in the row. To date six miles of fire lines have been planted in this manner. So far alder has given the best results but other species of hardwoods are to be tried further.

"The Forest Branch of British Columbia has also had in mind for some years the use of hardwood firebreaks in their coniferous logged-off land. The British Columbia Government last year planted in this way 7500 alder, black cottonwood, ash, Manitoba maple and caragana. As their report states, - 'The object is to determine their possibilities on various sites in rapidly forming a forest cover which will assist in fire control'."

BIG GAME FOR THE GILA

Approximately 200 wild turkeys recently arrived at Santa Rita and were hauled by truck to the GOS headquarters ranch on the Sapillo within the Gila National Forest, states the Gila Bulletin. The turkeys were trapped in California and sent to the GOS Ranch by Col. D. C. Jackling. They will be fed at the ranch until after the hunting season, when they will be liberated in that vicinity. The 30 elk which were placed at the GOS Ranch in November, 1925, are thriving in the pasture which was specially fenced to hold them and Mr. Culberson reports an excellent calf crop. It is expected that eventually the herd will overflow the pasture and the Gila Forest may again be the home of this magnificent game animal. - District 3.

A CORRECTION

Credit for the article "A Ranger's Wife Talks" by Mrs. Albert Yochelson in the August 30 issue was given to D-4 instead of D-1. D-4 swiped the article from the D-1 Bulletin and we borrowed it from D-4. We have since learned that Mrs. Yochelson is a member of the D-1 family and not D-4. This fact was wrathfully called to the editor's attention by the vigilant D. F. in Missoula. We extend a thorough and comprehensive apology to everybody.

GETTING 'EM TRAINED

By L. A. Barrett, D-5.

On the night of September 3 Forest Supervisor Hall and I were sitting out under the trees in front of Carl Inn, a resort on the Big Oak Flat road into Yosemite Valley, when two men drove up in a closed car. Stopping the machine, they both "lighted up," puffed away contentedly for about ten minutes, carefully extinguished their snipes, and proceeded on down the road.

Incidentally, in a three-day trip over portions of this well traveled road we only noted one violation of the "no smoking" rule, and this party was "called down" by the Park ranger at the checking station where we happened to be at the time.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

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THE VALUE OF BRUSH COVER

By E. A. Sherman.

The water users of Southern California have for a number of years been disturbed at the falling of the water levels in that region and the apparent waning of their underground water supply, as well as the intermittence of surface flow. Based upon long experience and observation they have learned to prize the chaparral cover which clothes the hills within the Santa Barbara, Angeles, San Bernardino, and Cleveland National Forests. Almost without exception the public is tremendously interested in seeing that this cover is protected from destruction by fire, and a large brush fire is viewed as a serious calamity.

In order to secure the early construction of fire breaks, trails, telephone lines, lookout stations, etc., essential to adequately safeguarding these Forests from destruction by fire, the local communities have offered to cooperate with the Federal Government 50-50 on a $2,000,000 construction program. A bill authorizing the appropriation by the Federal Government of $200,000 a year for five years on that basis has passed the Senate and was before the House when Congress adjourned this summer. Its consideration will no doubt be renewed when Congress convenes in December.

Meanwhile, in response to urgent representations made by delegations from Southern California and by the California Congressional membership, a deficiency appropriation of $100,000 for this purpose was granted by the last Congress, and Director Lord of the Bureau of the Budget promised a personal investigation on the ground during the summer season by some member of his office in order to determine what action the Bureau should take on further requests for funds for watershed protection purposes. This investigation was made by Mr. C. H. Fullaway and Major F. A. Frost August 23 to 29, inclusive. All four of the Forest regions were visited, the results of previous fires witnessed, evidences of loss by floods in the valleys were pointed out, and a very thorough study of the entire situation made so far as the limited time permitted.

Two specific statements of the value of brush cover for the prevention of floods and damage by erosion are worthy of record. On August 24 the representatives of the Bureau of the Budget visited the San Dimas Dam in San Dimas Canyon, Angeles National Forest. Mr. H. S. Gilman was in charge and gave the following very interesting information: The San Dimas dam is the first of a series of flood control dams to be erected by the Los Angeles County Flood Control Commission, being part of the program for which a $40,000,000 bond issue was voted. The dam cost $700,000 and has a capacity of 1500 acre feet. Since its completion the canyon has had one flood. In April, 1926, eleven inches of rain fell in 48 hours. During this period of rainfall 1,100 acre feet of water was measured into the reservoir.

Before the rain started the reservoir was nearly empty. At its conclusion the water was within seven feet of the top. The area of the watershed is 15 square miles. Therefore, during the 48 hour period there fell upon this watershed 8,800 acre feet, of which 7,700 acre feet were held back by the brush and 1,100 acre feet by the dam. Mr. Gilman raised the question. If it is worth $700,000 to secure a dam which will hold back 1,100 acre feet of flood water in a single storm, what is the value of the brush on this watershed which held back 7,700 acre feet? He did not directly claim that it was worth approximately $5,000,000 or seven times $700,000, but he did claim that certainly the brush was very, very valuable.

At a dinner given to the members of the Bureau of the Budget by the Southern California Conservation Association at the University Club in Los Angeles the evening of August 26, Mr. Bell, Assistant Engineer of the Flood Control Commission, made the statement that from actual measurements which he had made personnally he had learned that the erosion from a recently burned watershed in that region might in a single heavy rain amount to the equivalent of half an inch over the entire surface area, or, in other words, to 26½ acre feet for each Section.

Such figures, supplemented by the perfectly obvious tremendous value of lands and settlements depending upon these watersheds, could not do otherwise than make a very profound impression upon the Bureau of the Budget representatives.

CALIFORNIA DISTRICT HAS STRENUOUS FIRE SEASON

By S. B. Snow.

California this year has been faced with fire conditions ranking in severity with the never-to-be-forgotten season of 1924, but differing from it in one important particular in that almost all of the disastrous fires occurred outside of southern Calfornia.

To June 1, due to spring rains, the season was below normal with a total of only 70 fires for the first five months of the year. Then came a period of ten days during which 46 lightning and man-caused fires broke out in the Sequoia, Klamath, and Shasta Forests, and burned over 10,000 acres. The latter part of the month was marked by a heavy run of lightning fires in the Sierra, with a total of about 200 moderately sized fires for the last 20 days.

The general fire season in northern California opened with a bang about the first of July, and was critical throughout the month. Low humidity, high temperatures and hot winds all added to the hazard, with the result that in the first ten days of the month there were 154 fires; second ten days, 318 fires; and the last ten days, 134 fires - a total of 606 fires, or an average of 20 fires per day throughout July. One hundred and thirty-three of these reached Class C size. The total area burned over during the month was 162,000 acres, one-half of which was National Forest land.

Conditions in July, outside the National Forests, were even more critical, and during the first three weeks an area at least twice as great as that burned over during a corresponding period in 1924 was swept by fire. A foothill fire of about 30 square miles near the Stanislaus Forest, which destroyed several hundred thousand dollars worth of mining improvements and one town, was the most disastrous. During this period, the Bogus Creek fire, - in the region where Peter B. Kyne pulled off an imaginary fire in his COSMOPOLITAN story "The Understanding Heart," - burned over 12,000 acres, and there were other serious fires on the Trinity, Tahoe, and Sierra.

Continued hazardous fire conditions marked the first half of August, although light rain on August 17 somewhat relieved the situation in the more northerly forests of the State. The peak was reached on August 6, when there were 23 large fires burning in the National Forests following an outbreak of 19 incendiary fires on the Klamath on August 5. A total of 268 fires were fought during the month, 233 of which were man-caused. The total area burned over was

208,074 acres, of which 76,295 acres was National Forest land.

Fire conditions outside the National Forests continued acute during August and many large fires resulted, chief among which were:

Pickering Lumber Company fire on Stanislaus - 4,000 acres.

Badger fire, 70,000 acres, of which 5,000 acres was in the Sequoia Forest and 15,000 acres In Sequoia National Park; the balance being "outside."

Mill Creek fire near Lassen, 10,000 acres.

Priest Grade fire near the Stanislaus which destroyed part of the resort at the top of Priest Grade, and covered many thousand acres.

Deetz fire near the Shasta Forest, 7,000 acres; $10,000 worth of ranch property destroyed.

Iceland fire, outside Tahoe Forest, 8,000 acres.

Sierra Buttes fire, Tahoe Forest, 3,000 acres; $100,000 mining plant destroyed.

Little Last Chance fire in and out of Plumas Forest, 30,000 acres.

September, taken as a whole, was more favorable due to improved weather conditions, the closure to smoking of all National Forests, except the Inyo and Mono, and the employment of 90 additional guards to register all sportsmen and visitors to the National Forests of northern California following the opening of the deer hunting season on September 1. On October 1 a general rain fell over most of the northern part of the State, extending as far south as the Sierra Forest.

The first week of September was marked by two large fires of 5,000 and 6,000 acres on the Santa Barbara, and the last week went out in a blaze of glory with a 10,000 acre fire on the Lassen. A total of 249 fires, 239 man-caused, burned during the month, 92 of which were Class C. The total area burned over was 54,981 acres, of which 13,069 was National Forest land.

As a fire prevention measure, the National Forests of southern California were closed to smoking early in June. The wisdom of this move, which was made doubly effective by county ordinances, was proved by the fact that out of a total of 358 smokers' fires in the District to Semtember 30, only 39 occurred in the southland. A surprising fact, however, is that with all the Forests (except Inyo and Mono) closed and posted to "No smoking" and with extra guards registering everyone going in, there were 109 smokers' fires in Spetember - 97 in 12 northern forests and 12 in four southern forests.

Closure of forest land to public use was enforced only on limited areas on the Shasta, California, Tahoe, Sierra, and San Bernardino. The proposal to close all the Forests at the opening of the general hunting season on September 1 led to a cooperative agreement with the Associated Sportsmen's Clubs of California, whereby the Association undertook to raise a fund for the employment of additional forest guards to be used in registering everyone entering the Federal Forests. Twenty-five hundred dollars was collected under this plan by popular subscription from sporting clubs and individual sportsmen, and turned over to the Forest Service.

A new idea in fire prevention was successfully enforced on the Shasta during the September hunting season. Every sportsman entering the Shasta was required to equip himself with an ax and shovel, and to register and agree to fight all fires that started in the hunting region. Guards were posted on all main roads and a day by day inspection of all hunting camps made. As a result only four small fires occurred in this hunting region during the first fifteen days of September.

Credit for the outstanding fire record of the District goes to the Angeles Forest, long considered the "tinder box" of all Calfornia forests. Only one fire has occurred on the Angeles since July 31, and the record for the season is 12 fires that burned a total of 815 acres, 314 of which was Government land. At the other extreme stands the Shasta with a total of 299 fires covering 35,000 acres (5,009 acres Government land), 116 of which were set by the Southern Pacific R. R. in the Sacramento Canyon District and 103 by smokers and camp fires. The greatest area of National Forest land burned over was on the Klamath with 48,637 acres, the Sequoia being second with 39,369 acres.

The summary of the fire record for the past three years, for the period January 1 to September 30, is as follows:

	1926	1925	1924
Total number of fires	1,506	1,827	1,810
Number Class C fires	392	214	451
Area burned over, total	560,277 A.	90,355 A.	628,809 A.
National Forest land	205,259 "	49,537 "	337,607 "
Private inside	59,231 "	10,248 "	114,167 "
Outside	295,787 "	30,570 "	181,820 "
Suppression and patrol costs			
July 1 to September 30	$464,624	$153,269	$724,844

	1926	1925	1924
Law enforcement cases	296	137	237
Convictions	239	104	173

Causes of Fires

Cause	1926	1925	1924
Lightning	514	1,336	750
Man-caused	992	491	1,060
	1,506	1,827	1,810
Man-caused:			
Railroads	144	26	69
Smokers	394	210	456
Camp fires	120	83	166
Brush burners	34	20	46
Lumbering	51	81	56
Incendiary	138	19	129
Miscellaneous	111	61	138

In critical year, fires start more readily, as is evidenced by the greater number of smoker and camper fires, while incendiary fires increase because of the recognition of the opportunities for burning. The great increase in the number of railroad fires was due primarily to the use of a new type of engine by the Southern Pacific Company.

The initial spread of many fires was very large. On the Shasta Forest the Deetz fire, in cut-over land, run 2,000 acres the first afternoon, was controlled, but broke over and burned 3,000 acres the second day. On the Plumas, the Little Last Chance fire, in virgin timber, made an initial run of 1,500 acres; attained an area of 10,000 acres the second day and 25,000 acres the third day. Many of the fires outside the National Forests also made exceedingly large runs, as for example the Oakhurst fire outside the Sierra Forest which ran 8,000 acres in one afternoon. Many attained sizes of from 10,000 to 50,000 acres, and the total acreage burned over outside the National Forests is estimated at one million acres.

Airplane forest patrol again rendered effective service throughout the season, particularly in the scouting of large fires and in the detection of "smokes" after severe lightning storms. One plane was stationed at Griffith Park near Los Angeles and two planes at Mather Field, Sacramento. No serious accidents marred the flying record of the year.

Through the cooperation of District 3, Assistant Supervisors C. W. McKenzie of the Coronado Forest and M. F. Pincetl of the Santa Fe Forest were loaned to this District for about a month in the effort to clear up some of the incendiary cases that had developed on the Trinity and California Forests.

VARIATION IN GUM YIELDS

By Lenthall Wyman, Southern For. Exp. Sta.

One of the interesting facts brought out in the study of turpentine gum yields has been that trees with similar crowns, of the same size, age, and appearance and with like spacing frequently have quite different gum yielding capacities. This individual variation in gum yields is apparently much more pronounced than variation in growing power. With two trees of the same age on the same site, one would hardly be making three times as much height growth as the other. Likewise two trees of the same age equally spaced would have reached very nearly the same diameter. It is not at all uncommon, however, to find one tree yielding three times as much gum as another tree which might well be its twin as far as one can judge from outward appearance.

Site and age very largely determine the height of a tree, and spacing, site, and age are the principal factors that determine the diameter of a tree. Some of the factors that determine gum yield are also known. Diameter of the tree is most important. Then come size of crown, crown and root space, and crown class. External factors -- such as depth and height of the weekly cut (streak), width of face, temperature and rainfall -- also affect the yield of gum. With all of these factors equal we still find that some peculiarity in the tree causes a wide variation in yield.

To illustrate, at Starke we have kept records of the gum yielded annually by each of 220 slash pine trees, all chipped alike and all on the same site. Out of this group it is possible to select on the basis of their gum-yielding qualities (a low-yielding tree being paired with a high-yielder of the same size, ten pairs). The diameter of two lots are the same. In height they differ by one foot. In crown width and length there is nothing to choose between them, and the same holds true for crown class. In yield, on the other hand, one lot produced an average of 54 ounces of gum per tree for the season's work, while the other lot produced an average of 130 ounces per tree.

Going at it in another way, two groups of ten trees each may be selected having the same yields of gum. One set is chosen from large trees and the other from the small ones. The large trees are 20 feet taller, 4.4 inches larger in diameter, have a crown width twice as great, and a crown length five feet greater, than for the small trees. Yet the two groups produced identical amounts of turpentine and rosin.

It was thought that small-yielding trees might be more susceptible to insect attack than large producers. But a study of the few bug-killed trees we have does not bear out this supposition.

It is quite possible, however, that they would be less resistant once they were attacked. Perhaps the tree breeder will see in these variations an opportunity to breed up a strain of high yielding trees. The turpentine man would certainly welcome such a move. The Station is "rarin' to go", but lacks the money to do so.

"SMOKECHASERS"

By Fred Morrell, D. 1

An incident or two of work done by some of the men in District One during the past fire season may be of interest to some of the Bulletin readers not acquainted with conditions in north Idaho and western Montana. Here are two regarding smoke-chasers:

Bob Prey, smoke-chaser at Cresent Lake, Kaniksu Forest, left for two fires at 4:45 P.M. on July 12, taking three men from a nearby logging crew with him. The first fire was five miles distant, part way by trail, part through heavy brush. The country is very steep. The men, of course, went on foot. They took three emergency rations apiece and two blankets. When they reached the first fire at 9 P.M., it covered 1400 square feet, burning in growth and heavy down timber. Work was started at once and the fire controlled and safe at 4:45 A.M. July 13. They then proceeded to the other fire one-half mile distant, arriving at 5 A.M. It was about five acres in size when reached. This one too was in reproduction and heavy windfall on a ridge exposed to wind. On the evening of the 14th, three additional men arrived. All existed on emergency rations till the 15th, when one man was put to work packing grub from Crescent Lake, five miles distant. The fire was controlled on the evening of the

19th, and one man was left to patrol it till the 22nd, when it was considered safe.

Carl Beck was a laborer on a trail crew on Sullivan Lake, 12 miles from the nearest road. When the storm broke on July 12, Ranger Pauley pulled the crew down to a road camp on Sullivan Lake. There they were split up and sent to various fires. Beck and another man were sent to a fire on the Hall Mt. divide, about six miles away. There was no trail and the route was through down timber and reproduction and at an altitude 3000 feet above their starting point. They left at 3:30 P.M. on the 12th, carrying their tools, blankets and rations, traveling a large part of the night. On account of the dense timber, they had trouble locating the fire, but found it at 9:00 A.M. on the 13th. Its perimeter then was about ten chains. They put a line around it that day, and Beck, leaving the other man to continue work on it, went up to the top of the divide, ½ mile distant, and located another fire. He trenched the fire that evening, and the two men continued work cutting snags and putting out fire inside of the line, one on each fire. Beck came out on the night of the 21st to the Harvey Creek station to get some bacon, beans and coffee, and went back. The two came out three days later.

There is an excitement and bustle connected with fire-fighting when large crews are used, that stimulates most men and makes the hard grind easier to take. But when two men go out and stay with a job for eight days on three days emergency rations, and then three days more after one of them has gone out and brought in more food, there can't be much glamour about it. Some day perhaps the smoke-chasers will be given his place in the literature of the country and his deeds thereby will become known and appreciated.

WILDERNESS AREA FOR THIS MAN

The Forest which tries to hand out summer home lots to a constantly increasing clientele, gets lots of good advice, according to the Coconino News. A recent applicant says: "In case you proceed on the idea of having these cottages in groups, you should also guarantee freedom from radios, player pianos, barking dogs, yowling cats, and rough poker parties. There is very little advantage to a cottage in the National Forest if one is forced to have close neighbors." If there is a place left with the above qualifications, we might like a brief sojourn there, too. District - 3.

TONGASS EAGLES - THEY FLY.

By Robert A. Zeller, Tongass

Two kinds were in evidence this year. Haliaeetus Leucocephalus: The Bald Eagle, indigenous, non-migratory, feathered, cussed and defended. They are meat eaters. The other, of the genus Loening, species amphibian, exotic migratory, glaucous winged, pontooned and wheeled. They eat gas. The first have always been here, and while other species of the latter breed have been known to cross the boundaries, those in evidence this year were the first of the particular kind to stay over the summer season. Manned by the Navy they follow the inshore route of the Canadian Honkers and winter in the fenlands next to Hollywood and San Diego, spending the summer in the mild and equitable region of the Tongass. This influx of the curly tailed amphibians was brought about by a cooperative project among various civilian departments for sending a picked crew of naval men, and four planes, to the Tongass for a season's mapping. One plane was lost off the Oregon coast, the other three reaching here safely. Ketchikan was the first base, Wrangell second, and they knocked over the short stop getting to third at Petersburg, and made a home run by descending on the rain drenched and scurrying populace of Juneau, the capitol, seat of the District Office, and of poor ball players.

A complete laboratory was contained within a 250 ton ammunition barge towed by the mine sweeper Gannet; so that as fast as the fliers using their Fairchild oblique and mapping cameras secured photographs of a section of country, the material was developed , and portions printed and checked in order to be certain that no blank pieces of country were left.

The purpose of the expedition was to map Southeastern Alaska (The Tongass.) Absolutely clear days were necessary and with the Eagles flying at 10,000 feet, gridironing the country strips five miles wide with a 60 per cent overlap of strips on the side and a 25 per cent overlapping of exposures fore and aft as the plane progressed, it was possible to cover ground rapidly.

Some 12,000 miles were flown and approximately six million acres of country mapped. The expedition came under a three-year program, but completed in this season a double portion of work because of the excellent weather encountered, and absence of mishaps. It is hoped that the third portion of the work may be completed next season.

The data secured with the oblique camera at from 4,000 to 6,000 feet show the steep mountain slopes, timber belts, lakes, and streams in excellent manner. They have been put to immediate use by the Forest Service in connection with efforts to promote the pulp and paper game.

The mapping cameras used at 10,000 feet elevation, tri-lens in nature, secured films of the country, which records are distorted as to scale because of the rugged and steep topography. The records must be treated and brought back to scale and by trimming, to eliminate the overlap, used in building up a map of a continuous section of country. The map will show culture. While it will be possible to determine with a sufficient degree of accuracy, the location of peaks and other features on the print, by using the known Coast and Geodetic Survey points on the shore lines as basis from which to project a system of triangulation over the map, it will not be possible to obtain topographic maps from the data. These must be secured later by land parties, using the primary net secured from the air as an aid.

The present mode of travel of the Rangers here has always seemed to be more or less time-consuming. The thought occured that they might use such means as these sea-going eagles in getting around, and thus cut down their job to job time, even if they failed to knock anything else over. The scheme was tried out, but one Ranger swallowed his chew of tobacco and couldn't see land and another man climed on the aft control, throwing the bird into a side slip. It seemed like flying into the face of providence to urge a continuance of such speed, so the boys went back to boats and peace of mind.

HIGH LEADS

By A. M. Koroleff, D-6

Many believe that high-lead yarding is incompatible with the leaving of seed-trees. In "Timber Growing and Logging in California" (Department Bulletin No. 1402) it is stated that in a typical case of yarding by high-lead method in pine forests of California, 77 per cent of standing trees over 12 inches in diameter were destroyed.

High-lead yarding, due to inherent features, is probably more destructive to prospective seed trees than any other method of power logging. However, in spite of this, the leaving of seed trees is feasible even with high-lead yarding, provided the management and logging crew earnestly try to save them, and such trees are not located in the immediate proximity of spar trees or yarding roads.

A record of interest in this connection is found on the timber sale in the Olympic National Forest where the Polson Logging Company is operating in Douglas fir and "fog belt" forest types. The company is yarding by a typical high-lead and "swinging" the logs to the railroad by a North Bend sky line.

Forest Ranger Eckerson marked on this sale about 130 trees, distributed over approximately 220 acres, to be left as seed trees. The trees were 2 feet in diameter and upward, and were selected at the time of felling timber, with due consideration to their position in regard to prospective spar trees. The logging crew was instructed, through the camp foreman, to avoid damaging the seed trees. Practically none of the marked seed trees were thrown down or broken in falling the timber or the high-lead yarding. The number of seed trees injured in logging, beyond recovery, was so small that according to Mr. Erickson, the loss of seed trees due to logging was only 3 to 5 per cent of the total. The company states that the special efforts required to save the seed trees were so small that the expense connected with them may be completely disregarded.

LOOKOUT TOWER

The humble and homely field of fire-fighting equipment forms one of the outstanding fields for fire-research and experimentation. The use of plows and tractors in constructing fire trenches the past season in Idaho and California is only one illustration of the possibility of new methods. In Michigan last year Livingston of the M. A. C., suggested using dynamite to blow out stumps to get water for pumps. There is a large field for developing the full possibilities of various types of pumps. Spark arresters for locomotives and donkeys need testing and improving. Portability of all types of equipment needs to be pushed to the limit. Hydroplanes for carrying fire-fighters and supplies in lake regions need to be tested. And scientific instruments of various types will need to be improved or invented as fire research pushes farther on.

The application of tools to fire-fighting should no longer be left to chance, or to unsystematic test or personal preference, and the development of new equipment should not be left to the attic inventor. We need definitely to turn men loose on these problems - men preferably with combined engineering and forestry background, and to organize, systematize, and stimulate the development of fire-fighting equipment. Is it not time for the Forest Service and the States to get together to establish fire equipment laboratories - to begin with one in the East and one in the West? - W. S.

THE MAN BITES THE DOG

Everyone knows the famous aphorism by the great editor, Dana, that it isn't news when a dog bites a man, but it is news when a man bites a dog. Well he's done it at last:

Fort Madison, Iowa, (by United News): E. J. Brown, sentenced to five years in prison, feels he has been short-changed.

"Notified that he was free because good behavior had reduced his time more than a year, Brown objected.

"After arguing several hours for his 'right to stay another year,' he was dragged to the prison gate and ejected bodily."

OLDEST WHITE PINE IS FELLED

One of the oldest specimens of white pine standing in the Eastern States was recently felled near Winchendon, Mass. It was 12½ feet in circumference at the ground and 116 feet tall. The first limbs were 54 feet from the ground and the circumference at that point measured 92 inches. Its age estimated by ring count was at least 280 years. It cut eight 12-foot logs, the first one scaling over 600 feet, the first four 2,000 feet, and the entire tree over 3,000 board feet of lumber. The lumber is valued at $200. -- Service Letter, Pa. Dept. Forests and Waters.

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ZON'S SILVER JUBILEE

Something over a quarter of a century ago a young man came to this country from his native home in Russia. Graduating from several foreign universities in the study of scientific forestry, this young man completed his study of forestry at Cornell University where he attained the degree of forest engineer. Since that time this young man, Dr. Raphael Zon, has been devoting all of his energies to the conservation of American forests. Whenever the future of our forests has been at stake, Dr. Zon has been in the thick of the fight for their conservation and practical utilization. He is still at that job as the Director of the Lake States Forest Experiment Station located at St. Paul, Minnesota. As a co-worker with such men as Gifford Pinchot, Foresters W. B. Greeley and H. S. Graves and the rest of the splendid group of men who have waged the fight for forest preservation, Dr. Zon has rendered a service to this country which has been of untold value.

During the past week a host of the friends of Dr. Zon sat down at a dinner meeting to pay honor to this foremost friend of the American forests. The Farmer staff gladly join at this time in paying a deserved tribute to an adopted son who has served faithfully and effectively the cause of conserving one of our great natural resources. The pity is that this country failed to listen to such crusaders before we allowed a limited group to scuttle the great resource and heritage which might have been saved for years to come. The American people, in their usual wasteful mood, have even yet failed to awaken to the alarm which is constantly being sounded by such men as Dr. Zon. May he be spared for another quarter century of service to a great cause. (Editorial in the St. Paul Farmer.)

Zon was appointed in the Forest Service on July 1, 1901, and completed his first twenty-five years of service on July 1, 1926. In celebration of that service, twenty-six of his friends gave a dinner in his honor in Minneapolis on the evening of October 15. A book of letters of appreciation and congratulation nicely bound in flexible green leather and inscribed "To Raphael Zon, Forester and Friend, from his Associates, 1901-1926," was presented to Mr. Zon by Dr. Henry Schmitz, head of the Minnesota Forest School. In these letters, glowing tributes were paid to Mr. Zon's service to forestry in this country by his many friends from one end of the country to the other, and even from abroad. Mr. Zon when called on said in part:

"The reason I accept this fine tribute so freely and without assumed modesty is because I feel that it is not personal, to myself, but rather to the movement with which I have been identified. I am simply an historical accident. I just happened to pass along when the "Big Parade" of forestry began. I fell into the ranks and have marched with the column ever since. Any man in a big movement, even the creators of it, must inevitably become creatures of the movement and partake of its spirit. The enthusiasm, the missionary spirit which you generously attribute to me are really an integral part of the movement itself. One had to possess these qualities if he was to keep pace with the movement."

ECHOES OF STATE FORESTERS' CONFERENCE

> "What we need to protect these great public properties is to have in advance enough money, men, and facilities to prevent fires or to cope with them before they grow large. As it is now we are forced to spend large sums of of money after the fires have got out bounds and then ask Congress to make up the costs through a deficiency appropriation. What we need is advanced appropriations sufficient to meet the National Forest fire problem. And the Federal Government must furthermore discharge the financial obligations it has assumed toward the States under the Clarke-McNary cooperative forestry act." (Secretary Jardine.)

Colonel Greeley stressed the point that State rather than Federal activity in forest conservation must be looked to for the main progress in timber growing from now on. His speech is extensively quoted below.

Future Trends in National and State Forestry
By W. B. Greeley

It is significant that the States were well ahead of the Federal Government in launching movements of one sort or another toward forestry. In 1872 New York created a Commission to consider State ownership of "the wild land lying northward of the Mohawk." In 1883 New York began withholding tax-defaulted lands in the Adirondacks from sale and thereby created a nucleus of 600,000 acres towards its forest preserves; and in 1885 began to build up its forest preserves by purchase. Michigan and Wisconsin both inaugurated inquiries into their forest conditions in 1867. In 1869 the Maine Board of Agriculture appointed a committee to report on a forest policy for the State. Between 1868 and 1872, eleven States passed bounty or tax exemption laws to encourage timber planting, all before the first Federal timber culture act. Forestry bureaus or commissions were inaugurated in a number of States during the 80's. Pennsylvania was in the lead of the Federal government in inaugurating a real program of forest ownership.

Then came a period when national developments took the center of the stage, and the vigorous leadership of Roosevelt and Pinchot established a national conservation policy and a national forest program of commanding proportions. In its later developments, this national program has defined the basis on which the Federal Government will deal with our forestry problem in the broad. It has accepted the cooperative principle. It has passed the ball back to the States. It anticipates and prepares the way for the outward spread of forestry under State leadership.

I believe that the Federal policy dealing with forestry may, with the enactment of the Clarke-McNary law, be regarded as complete for many years to come. It is an integral part of this policy that for he main progress from now on in getting forestry into the ground, we must look to action by the States and other localized efforts. In saying this I do not ignore the striking and encouraging developments in State forest activities which have taken place concurrently with the developments on the part of the National Government. Nor do I minimize the necessity for greater effort on the part of the Federal Government to make its own deliberately adopted program effective and to carry its part thereunder. But the principal idea which I wish to place before you is that from the nature of forestry as a country-wide use of land and from the nature of the program which has been adopted and to which I presume we all subscribe, the development of greatest importance from this time on should be in the forest policies and activities of the States and in the forest undertakings of local institutions and individual citizens which the States can most directly aid.

Perhaps the greatest single obstacle to the rapid spread of timber growing in the United States is the unstable ownership of forest land or ownership which contemplates only temporary use or benefit from the land. Our forest land, in round numbers, is split up approximately as follows:

Federal government	89,000,000	acres
States	10,500,000	"
Municipalities and counties	700,000	"
Large private owners	220,000,000	"
Small private owners	150,000,000	"

The Federal Government may be said to have adopted a stable policy of administration for the great bulk of its forest lands in the Continental United States, although this is not true of an immense area of second rate forest land in Alaska. The State forest holdings vary from highly stabilized to wholly unstable. About 63 per cent of them, or 5,500,000 acres, is under permanent administration as State forests or State parks, while nearly 5,000,000 acres more is either subject to sale or is being held with no definite policy or plan for future development. Instability of ownership and uncertainty as to future use are still characteristic of the larger private forest holdings; but a strong trend toward greater permanency of ownership and productive use is evident. This trend constitutes one of the most significant and encouraging features of the present situation.

From the standpoint of stabilizing the forest land situation, it is particularly important to extend public ownership in the classes of forest land which present the greatest difficulties and problems in profitable reforestation. I have in mind particularly the poorer forest soils with slow growth rates, areas subject to the more extreme hazards, and areas whose present denuded condition holds out the least prospect of restoration under private ownership.

At the same time, by no means should public forest ownership be limited to the dregs in the pot. The expansion of public activities in this field must carry a popular appeal, not only as meeting an urgent problem in land utilization but as offering substantial public returns in the long run. Moreover, the more demonstrations we can get in all parts of the country of good forest practice and profitable forest management, the more will the whole process of reforestation by all agencies be stimulated. In meeting these needs the public forest administrator should have some good and well-stocked land to work with.

In broad terms, considering our forest situation in the United States and drawing upon the experience of the most progressive forest countries of Europe, I do not think it unreasonable to get one-third of the forest land in the United States under public administration. This would mean the acquisition by all public agencies of about 60 million acres more, including the 5 million acres already in State ownership but not yet under any permanent form of administration. Such ownings should be widely distributed. There should be some of them in every State, and broadly speaking in every important forest region of every State. They should strike at the heart of the most serious idle land situations. They should serve as centers of the best sort of forestry education, by demonstrating good practice adapted to our immense range of soil, climate, and forest types. There have in recent years been many criticisms of the 50-50 principle in financial cooperation between the Federal Government and the States, some of which beyond doubt are merited. It is a ladder for climbing over the wall which the Constitution erected between the State and Federal jurisdictions that, unwisely employed, might lead to the encouragement of extravagance in public expenditures or unwarranted Federal interference in the affairs of the States. It is my conviction that the sober judgment of the country upon any specific application of this principle will be governed (1) by the actual public needs that are being met and the results that are being accomplished, (2) by the extent to which the work done is of constructive and permanent value, and (3) by the genuineness and mutuality of the cooperation.

I am particularly interested among other things in the most constructive and helpful way of carrying out the purposes of section 1 of the Clarke-McNary act, in relation to the study of protection requirements and the development of better protection methods. We have yet just scratched the surface of this section. It ought to be one of the most valuable features of the program.

With each severe fire year, like that of 1926, we are learning afresh on the National Forests that effective protection is far more than a matter of providing funds and employing men. We are appreciating the fundamental importance of giving greater attention to such features as:

(1) The training of our protection personnel, both the permanent force of rangers and the summer force of guards.

(2) Perfecting the mechanics of the protection organization, the actual functioning of lookouts and patrols and of the first line fire suppression forces.

(3) Checking up on the breaks and mistakes, getting every member of the protective organization to do his part under specific instructions and plans of action, and seeing to it that these are observed.

(4) Extending the technique of fire suppression in such ways as utilizing new equipment such as plows in constructing fire lines, hand and gas pumps, and the like.

(5) Perfecting mopping-up practices after a fire is under control, - making fires safe and being sure they are safe before they are abandoned.

(6) Working out ways and means for fire-proofing the woods. On the National Forests we have a large field for preparedness in this respect that will be economy in the long run, along such lines as cleaning up roadside slashings and safety strips, constructing firebreaks at strategic points, and extending through our hazardous areas a large mileage of inexpensive "fire ways" serving both as trails to give quicker access and as rudimentary lines to serve in fire control.

(7) Developing our basic knowledge of fire hazards by research along such lines as the study and forecasting of fire weather and learning more about the behavior and spread of forest fires even down to the physical processes of combustion.

There are large opportunities for progress in such phases of protection. We must recognize that we have a technical job, comparable to our technical job in silviculture, in determining how to make forest protection most effective. I regard this as a matter of vital consequence to our whole national protection program. And one of the most important things that should be done, between the States and the Federal Government, is to provide a clearing house of ideas and experience so that we can all share in and profit by them.

In the domain of timber planting the Federal Government is very conspicuously occupying a glass house. With something like two million acres of National Forest land that needs planting, we are creeping along at a pace of 12,000 acres yearly. Without overplaying the part of planting in relation to forest protection and the development and improvement of natural stands, there is no doubt in my mind that more tree planting should be emphasized in Federal and State work. I am convinced that the creation of greater forest values by planting will add to the stability of forest land ownership and to both individual and public support of forest protection and more rational forest taxation. We should not ignore the concrete value of timber planting in creating forest sentiment and bringing support to all parts of the program. This is even worth some mistakes in planting technique or in planting where subsequent results may show that natural reproduction would have accomplished a satisfactory job.

Another matter which deserves special attention is the need for research in timber growing combined and correlated with the local problems in wood utilization and maintenance of profitable forest industries. This is particularly true in the Eastern States where in many instances we are going through a period of change or readjustment not only in woods practice but in manufacturing and marketing conditions. The competitive pressure from western lumber is a factor. The substitution of other materials or products for old forms of wood is a factor. Changes in forest conditions, like the dissappearance of the chestnut, are factors. The whole forestry profession will be taxed to its utmost in guiding the land owner and wood-using industry intelligently through this period. The Forest Service will extend its research in silviculture and timber utilization by all the means at its command, but we can not begin to meet the needs of the situation; and it would be undesirable to have the research work in forestry solely or primarily a federal function even if we could discharge it.

The main idea I am preaching to-day is more localized effort in forestry all along the line; and this should include a great deal more research work in timber growing and related utilization problems. The most we can all do together will fall short of supplying the information needed to guide wisely the forestry movement in its many local aspects.

I think we all appreciate the tremendous gain made in recent years in public comprehension of the whole series of problems connected with forestry. Some of our own profession have lately relieved their minds of rather caustic criticism of the volume of forestry in speech and print as compared with the amount actually being practiced in the woods. Admitting the accuracy of the comparison, this does not concern me at all because we have been steadily creating greater public comprehension of forestry problems and better public support for legislation and other forms of public action that are going to lead inevitably to doing more in the woods.

It is probably true, however, that public thought still views forestry too largely in generalities and that the public interest is not focused sufficiently upon specific things that ought to be done. In the activities of the Forest Service, I find it necessary constantly to clarify enthusiastic but foggy minds and get their interest focused upon definite and practical things.

What we need, I believe, in our public relations is to bring forestry down to brass tacks. Our work has wonderful general support. This should be brought behind speccific and localized forestry programs, carried home to the people in each State in terms of immediate and practical interest or responsibility which they can readily grasp.

EDUCATIONAL POSSIBILITIES UNDER THE CLARK-McNARY LAW

By Assistant Forester Paul G. Redington

"The Clarke-McNary Law opens the way for a study of forest fire problems such as we never had before. It is an opportunity to compare methods and results in different regions and different States for mutual benefit and to work out new methods and principles in forest fire control. Investigations of fire control have been completed in four States by the State and Federal Forest officers acting jointly and the results will soon be made public."

Calling the Clarke-McNary forestry law a piece of neighborly legislation for the benefit of all the owners of forest land in the United States, Mr. Redington asserted the law is peculiarly rich in opportunities for educational contact. "It provides for direct assistance to those engaged in two of the most widespread and important industries - agriculture and lumbering. It is not mandatory but is designed to encourage all those agencies that have a self-interest in keeping our forest lands productive. It provides the elements necessary for a great educational effort - the accumulation of knowledge, the dissemination of this knowledge by direct contact, and the demonstration of good forestry methods.

"It will be the function of the Forest Service to coordinate and, where necessary, to stimulate this educational drive to see that it is nation-wide in character."

The educational work in forestry among farmers provided by the Clarke-McNary Law is of the utmost importance to our future timber supply, according to Mr. Redington, because a third of our total forest area is in farms. Likewise the splendid efforts of the States in providing millions of young trees for planting on farms and elsewhere is not only directly beneficial in adding to the timber supply, but has a great educational value.

CARRYING OUT THE CLARKE-McNARY LAW

One of the prime objectives of the Clarke-McNary Law, as outlined by E.O. Siecke, State Forester of Texas, is the building up of strong forestry departments in the States sympathetically supported by the Federal Government. This, Mr. Siecke pointed out, will give the maximum impetus to the forestry movement.

BASIS OF FEDERAL ALLOTMENT

By J. G. Peters

"The Federal Government is not beginning to meet its share of fire control under the present cooperative program. At present it is allotting to the States a little more than $600,000 a year, whereas the States and private owners are spending in excess of four million dollars a year. To meet the Government's share, the present Federal appropriation needs to be raised nearly to $1,100,000. Even when it is raised to that amount, however, the total job of fire control will be only about half done. We estimate the total cost of reasonably protecting all the State and private forest lands in this country at about $10,200,000. Under the Clarke-McNary Law, the States and private owners would pay about $7,700,000 and the Federal Government about $2,500,000."

FOREST TAX STUDY

By Dr. Fred R. Fairchild

"The forest tax problem is an integral part of the general property tax problem. It can not be isolated from other property taxation and studied alone, but must be studied in its relation to all other forms of the general property tax. Before we can successfully revise local taxation, whether of forest or any other class of land, we must have a thorough understanding of the needs of the local government for roads, schools, and other public purposes as well as of the sources of tax revenue and of the comparative load borne by all classes of property. So our investigation has got to embrace the whole field of property taxation, and if I am not mistaken it will throw light not only on forest taxation but on all phases of property taxation. But we must not expect results too soon. We are trying to develop basic principles of property taxation as applied to growing forests. These principles can not be formulated out of thin air but must be based on a patient, detailed, intensive field study of taxation practice in typical selected counties throughout the country. When we get these principles worked out, however, I feel sure they will be of assistance to the States in framing fair methods of forest taxation."

ANALYTIC SILVICULTURE

By P. C. Wakely, Southern For. Exp. Sta.

"A Pound of Lard and a Gallon of Turpentine". -- That is what current humor claims as the normal yield from a "piney-woods rooter" - a razor-back hog. A recent test made by the Great Southern Lumber Company at Bogalusa, Louisiana, would seem to lend authority to the claim. They fenced two and a third acres of excellent longleaf pine reproduction from the 1921 seed crop and left the seedlings at the disposal of two razor-backs for two months. Toward the end of the second month the hogs were given a little corn - to guarantee the pound of lard. The turpentine was well provided for; counts on a 1/100-acre plot in the largest uniformly damaged area gave the following figures:

Total living seedlings, per acre	67,100
Total rooted out and destroyed, per acre	13,500
Total original stand of seedlings per acre,	80,600

In this instance a more than ample stand was left, but suppose the hogs had struck a plantation containing less than a thousand seedlings per acre?

FIRE FIGHTING AT NIGHT

By D. L. Beatty, D#1.

Have we given enough thought to the possibilities of night fire fighting, especially on large fires? Usually a fire which has been running through the crowns during the afternoon, dies down by eight o'clock in the evening, leaving a clean hard burn at the edge, both in the crowns and on the ground. Therefore if a trench can be put in at the edge of the fire under these conditions, there is little danger of any further trouble if an adequate patrol is maintained.

It follows that if a trench could be constructed during the night hours, it would be most effective. A large amount of difficult back-firing would be eliminated, and back-firing in heavy green timber - where crowns must be burned - is generally a very difficult job to accomplish safely and satisfactorily. Primarily, however, night work would result in getting a line around the fire in much shorter time than is now possible. During bad fire seasons there are usually many days when fires crown and spread rapidly, and the time during which trench can be constructed within a reasonable distance of the fire, is limited to about six or eight hours out of the entire twenty-four. Very frequently the small amount of trench which can be constructed in this limited time is wiped out by the fire swinging around the head of the line. It is all-important in fire control that every effort should be made to use all available methods and machinery to establish complete control lines at the earliest possible moment. Night fire fighting should be a big step in this direction.

Heavy loads of hose, pumps, plows and trail graders are now packed into the roughest country for fire use. Is it impossible to develop effective field lighting equipment which would be just as portable? During the past season many miles of fire trench were constructed with plows and trail graders, three or four men using this equipment doing the work of 75 to 100 men with grub hoes. With night and day fire fighting crews equipped with horse or tractor drawn plow and grader outfits, a big step in advance would be made in suppressing large fires, and if the same methods could be used on some of the so-called small fires there certainly would not be so many large ones.

NEW USE FOR SIGNS

By S. M. Floe, Deschutes

"Judge" Cleaves, of Crescent, on the Deschutes Forest, has a new sentence that he intends to impose on the fire trespassers. We supplied him with a number of fire signs reading: "This area was burned over, because someone was careless with fire." He intends to give people who start fires one of these and, in addition to their fines, they will be required to go back to the area and post it in a conspicuous place. In cases where a camp fire is left and does not spread he intends to use one of the appropriate camp ground signs.

RANGER BILL BRINGS HOME THE BACON

Sample advertisements weighing two tons and numbering 150,000 were submitted in the San Francisco Chronicle amateur ad-writing contest and out of the welter comes a Forest Service man as winner, Wallace I. Hutchinson, Assistant District Forester in charge of Public Relations in District 5.

In the Chronicle is a picture of "Hutch" receiving the $500 prize money.

"It was" says the editor "no small task to arrive at the very finest of that mountain of contributions and it is no small honor that falls to Mr. Hutchinson."

The final judges were a group of prominent advertising men thus making the test a most exacting one, and proving that the advertiser of our wares in District 5 is so to speak the elephant's ear-muffs.

FORESTRY PROGRAM COMMITTEE ASKS FOR A MILLION DOLLARS A YEAR FOR WOOD RESEARCH

Washington, October 27,--General Lord, Director of the Budget, was yesterday asked to allocate a million dollars a year for the Forest Products Laboratory of the United States Forest Service, to enable it to continue and extend its researches into the mechanical and chemical properties, characteristics, and behavior of wood under varying conditions of use.

The request was presented on behalf of the American Forestry Program Committee by Chairman R. S. Kellogg, Secretary of the News Print Service Bureau; Ovid M. Butler, Secretary of the American Forestry Association; Wilson Compton, Secretary of the National Lumber Manufacturers Association and Arthur T. Upson, Wood Technologist of the same organization.--Nat'l. Lbr. Mfgs. Ass'n. News Release.

WITH THE ROAD BUILDERS

Engineering reports as follows for 1926:

Constructed 1,930 miles of roadway
" 4,694 " " trail
Repaired 11,965 " " roadway
" 44,919 " " trail

The cost $11,861,560 was with the exception of $127,756 appropriated from Federal funds.

The total amount expended to July 1, 1926, for approved construction, improvement and maintenance in States containing National Forests was $68,720,475, $14,418,962 of which was cooperation money. With this money 11,882 miles of road and 26,778 miles of trail were built and the average cost was $4,571 per mile for roads and $200 for trails.

At present the road and trail system which has been prepared for the 160 National Forests to include all roads and trails required for forest purposes during the next ten years embraces a total of 49,553 miles of roads and 104,370 miles of trails. This system includes 15,092 miles of Forest Highways, of which 5,035 miles have been constructed to satisfactory standard, 8,758 are existing roads upon which reconstruction or improvement is necessary, and 1,299 are nonexisting proposed roads. The Forest Development roads total 34,461 miles, of which 9,250 miles have been completed to a satisfactory standard of construction, 13,593 miles represent unsatisfactory existing roads and 11,618 nonexisting proposed roadways. The trail system represents a total mileage of 104,370 of which 65,643 miles are now considered satisfactory, 12,956 miles unsatisfactory, requiring reconstruction or improvement, and 25,771 miles proposed. To construct and improve to a satisfactory standard this entire road and trail system, there would be required the expenditure of the following amounts: for the Forest Highway System, $125,228,151, for the Forest Development System, $48,321,056 and for the Trail System, $6,390,665. The total appropriation required is therefore $179,939,872.

PHOTOGRAPHERS AND EXHIBITORS- ATTENTION!

"A fundamental requirement for a worth while pictorial effort is a unified theme, that is, it must have ONE idea to put over. Everything in the picture besides the principal object should contribute to the development of that idea. When there are a multitude of objects, each clamoring for attention, the result is distracting to a painful degree."

Service Bulletin

U.S. FOREST SERVICE
(Contents Confidential)

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CLOSING IN ON THE EMENY

(One of the good results of a bad fire season has been to stimulate the entire Service to harder thinking on our perennial problem. The following keynote letter sent by the Forester to Districts 1, 5, 6, and 7 will further stimulate the Service to crystallizing this thought into action.)

The experience of the past season has driven home afresh the extreme difficulty and importance of our National Forest fire problem. A large part of our efforts have been devoted to fire control in the past and we have gone a long way in its development. It is obvious however, that we have not got on top of our fire job and that we must get a fresh hold on the facts and make sure that the best possible executive effort is put into carrying out plans which have been adopted or may be adopted in future.

During March and April Mr. Headley and I will spend two weeks in each of Districts 7, 1, 6, and 5 for the purpose of getting an up to date knowledge of the programs and methods which will be put into execution during the season of 1927. In this letter I want to take up what seems to us to be the main issues and indicate the trend of our thought and discussions here on these points. We will want to follow up these subjects with you and your associates next spring, working out as specifically as possible the things which should be done in the immediate future and how we are going about it to get them done.

MAN POWER AND CORRELATION OF FUNDS

It is merely stating the obvious to say that our success in fire control depends on catching fires small and that on most of our bad fire Forests catching fires small, turns in part, at Least, on the number of men we have IN THE WOODS when the fires occur.

Many of the statements made to the public, the Bureau of the Budget and Congress are to the effect that more funds with which to employ guards would end our serious fire losses. We want to be sure whether this is really so or whether we are deceiving ourselves.

We have three funds which are directly involved in this question -- General Expense, the road and trail funds and FF. The General Expense appropriation provides for a considerable number of regular guards on each bad fire Forest and we hope for an increase of some $77,000 in our next appropriation which will be available for employing more guards if that is the most urgent need. As a rule the bad fire forests need an enormous amount of way and trail work and we are liberally supplied with funds for that purpose. If desirable, the increase we expect for the next fiscal year in G. E. can be used as needed for paying way and trail workers for the days during which they are so trained in fire suppression methods and knowledge of the country that they will be as effective as regular guards in coping with fire, emergencies. Our FF fund is available for payment of emergency guards when physical conditions become such that to employ them will cost less than to employ fire fighters AFTER the fires are actually burning.

Assuming then that a Supervisor has a GE allotment for 45 regular guards and a $50,000 allotment for way and trail construction and maintenance, I do not see any good reason why that Supervisor should not plan to employ 345 men and begin in March or earlier to search out the best individuals and make arrangements with them. His GE allotment will provide for 45 men for the fire season. His $50,000 for way and trail work will provide for 150 men for a full season or 300 for a half season. If the fire season proves to be bad the entire 300 can be paid for the full season out of the trail fund and FF which would be drawn upon while they are fighting fire. If conditions become such as to require taking some of these men off their trail jobs and assigning them to patrol or holding them at points where there is no trail work to be done, FF may be used to pay for such service. If desirable, additional men may be employed as emergency guards instead of converting "way" workers into emergency guards If the season proves to be easy the 300 way workers can be reduced by weeding out the poorer men and not replacing those who quit for their own reasons.

No actual case is as simple as this illustration. There are complications and modifying factors which will vary with different Forests. But so far as money and authority are concerned I see no reason why a number of men can not be employed in at least the ratio to GE and trail allotments which I have indicated and ,(a most important point) I do not see why the employment of such a number of men can not be planned for in advance and all necessary time taken to search out the best men to be had. If a liberalization of the present instructions concerning employment of emergency guards is necessary to carry out this program, I am ready to consider it. I believe we have sold the Bureau of the Budget on the "ounce of prevention" theory, and am ready to take responsibility for applying it to the full extent of all the resources we can command. To employ men in such numbers will put a severe test on our skill in selecting, organizing, training and managing men. I suspect that our skill in such matters will break down before available funds are used to the limit.

If this view is correct can we any longer accept lack of man power as a reason for failure to stop fire losses? If our real difficulty is not lack of money with which to secure man power but lack of flexibility and skill in financial management, organization, or training, let's locate the real trouble and come to grips with it.

Machinery.

We know that speed in throwing a control line around a fire is one of the two main essentials to effective fire suppression. Our construction of control line, especially with crews, is not a speedy thing; it is usually disappointingly slow. We know that plows speed up the process greatly. Mr. Beatty goes so far as to state that three or four men with horses and plows are equal to seventy-five or a hundred making fire trail by hand. Even if this is too optimistic, we know from actual tests in typical ridge top timber in North Idaho that one man with a well broken horse and plow can keep up with ten men cutting right of way, the plow making three one way trips and leaving very little which has to be done by hand. We know by actual experience that two men with horse and plow are equal to from ten to twenty grub hoe men even in hemlock stands with many big roots lying on or partly above the surface.

Mr. Durbin reports 3 miles of fire trail made in an hour and a half at night by three men with a horse and the District 5 trail grader, presumably in open yellow pine country.

The value of the horse and plow or horse and grader equipment has now been demonstrated in all three of the western fire districts. So far as we know here, there is no instance where the use of the Oliver side hill plow with a suitable horse and a trained man has failed to speed up line construction to a marked degree. We know that the fire sector on which the use of a horse and plow does not pay because of rough or rocky ground is a quite infrequent occurrence. We know that plows can be successfully used up and down slopes up to at least 40 per cent and that on contours a horse can work on slopes up to 80% or more.

If a horse and plow is equal to 10 men for throwing a fire trail around a Class B or C fire, each horse and plow kept at a guard or ranger station or trail camp is equivalent to a ten man crew held in readiness for immediate use on nearby fires. The difference is that the cost of maintaining a ten man emergency crew at a guard station or trail camp is usually prohibitive while the cost of a horse and plow and maintenance of the horse is a relatively small and entirely practicable matter. Headley and I can not see why a steadily increasing number of guards and trail workers should not go to fires with a 1600 pound horse packing plow, hand tools, grub, feed, and harness. If the fire is caught while very small the horse and plow are not needed. But if the fire gets away the plow can be set up and put to work. It is as though the guard brought along in his pack a 150 pound package which in case of need could be transformed by a few magic moves into a ten man crew on the spot and not having to be sent out for even from the nearest settlement.

When lightning fires bunch on us as they have the past season the vital thing is to get ,within 24 hours, the maximum number of properly led and equipped men at work on the fires which escape from the local guards, trail and road workers or cooperators. It is usually impossible to get very many men from distant towns on such fires during the first 24 hours. 30 horses and plows distributed over a Forest are equal to at least 300 men ready to go to work as soon as guards and trail workers can get to fires. The possibilities of using this resource are too big to permit any neglect or delay in its application.

Tractors and drags or tractors and plows have large possibilities, particularly where there are road systems. We want to experiment with them and develop this method. But in the meantime we do not want to let anything interfere with putting promptly into use the horse and plow. We know what this equipment will do and it is already developed and ready to use for a relatively small cost.

The use of plows in trail construction has been held back for years by inertia or whatever it is that prevents a somewhat unfamiliar method of proven value from gaining prompt acceptance. We must expect the same difficulty in getting machinery used in fire suppression. What we must seek is the combination of demonstration, training and administrative control which will reduce to a minimum the time necessary to get the use of plows established as a regular feature of fire control.

If the view I have expressed about the importance of the plow in fire suppression is wrong I will want to correct it by conference with you in the spring. To the extent that the foregoing view is correct I will be interested in your plans for getting this method into actual use. The increase we hope to secure in General Expense will be available for purchase of horses and plows where that is the most urgent used, also for the purchase of trucks for transportation of horses where necessary mobility of horse and plow equipment can not otherwise be secured.

TRAINING

When we go into the woods we still find serious failure to apply existing knowledge of fire control. The remarkably clear instructions on backfiring in the Western Fire Fighters Manual are too often completely ignored - with disastrous results when fires are at all active. Speed in throwing control lines around fires is often seriously reduced by unnecessary work in widening and polishing rights of way and fire trails. Too often the work of taking over control line from the construction crew, backfiring, mopping up and patrolling is not organized and handled with a degree of skill which matches our knowledge of this part of fire fighting.

Bad judgement in leaving fires as safe is too frequent. Too often the post mortems which would disclose the real reasons why fires escape are either not made at all or are poorly done.

Plows and horses are nearly useless in the hands of men who do not understand them. Both men and horses can be trained in the use of plows anywhere in the woods and any time in the field season. Until a lot of such training is done we can not expect rapid progress in developing value of the plow in fire suppression.

In too many instances fires are hit too easily the first night and therefore become avoidable conflagrations. Too often fires become conflagrations because the line construction and backfiring which should have been done the first night by the men who have reached the fire is allowed to wait until morning. Sometimes this is due to failure to provide lights for night work and sometimes apparently to failure to understand the importance of continuous work the first night.

Executive work by Supervisors in getting done the many things which are indispensable to good fire control leaves much to be desired and the only answer is more imagination and skill in training this important group of our personnel. Washington men believe that training of Supervisors so that they will do their own inspection needs greatly increased attention. Too often district office men have to discover and take the initiative on sloppy work in preparedness which systematic inspection by the Supervisor should have corrected. Being so close to things seems often to have the effect of making Supervisors satisfied with too little. They need the corrective influence of the habit of using check lists and system in their inspections.

Probably intensive training of the most promising men is the only way by which an adequate supply of competent assistant supervisors can be secured for those Forests where a large number of way and trail workers should be employed, organized and trained for suppression as well as way construction and maintenance.

In many places cooperation falls far short of what has been attained under similar conditions elsewhere. The specific methods and equipment which seem to produce good results in fire prevention in some places are not used in others where they are apparently as appropriate. Attitudes on the part of Rangers in dealing with brush burners which seem to have produced excellent results in places have not been adopted by Rangers elsewhere.

Guard training is still faulty in places. The job of training trail and way workers in fire suppression seems hardly to have got started. Advanced work which has been done here and there in training cooperators in fire suppression suggests that this is a big opportunity which needs development in many places. The training of selected cooperators to take charge of fires is often particularly important.

These and many other aspects of our fire training problem call for initiative and skillful execution. Leadership and insistent demand for better execution must be supplied by the district office.

We shall want to go over your training program with some care. For each District and for the Service as a whole we should get a clear conception of how far we have gone in training, what the further possibilities are, the next steps to be taken and how we can get satisfactory execution of training plans. Each District has important contributions to make for the benefit of other Districts.

WAYS AND TRAILS.

The importance of ways and trails can hardly be overemphasized. They not only affect hour control to an important degree but have other vital relations to good fire control. Ways and trails have much of the value of fire breaks. When fires tend to run badly the speed with which plows can be used to convert ways into first class control lines offers large possibilities for preventing conflagrations. Even when ways and trails are not used as control lines they are indispensable to speed in getting plows and horses to fires.

The investment required for an intensive system of ways and trails is not large. If construction standards are properly controlled the additional cost per thousand of growing timber will be small; it may even be decreased because the investment in ways and trails will be more than offset by the resulting decrease in cost of fire suppression and loss of timber values.

Some kind of a standard of intensity of way and trail systems is needed for each different type of country to guide and control planning and locating. For the Forests of North Idaho and Western Montana 72 miles per township is now recognized as necessary-perhaps we should say this should be a minimum. 72 miles at $40 per mile will mean an investment of $2880 per township. Such a system will mean that no point will be over a half a mile from a way, trail, or road.

A by-product of expenditures on construction and maintenance of ways and trails is that it keeps in the woods a large number of men, productively employed but ready for immediate use as trained fighters. This has an important bearing on the economics of way and trail construction and maintenance. A further by-product is that the necessary use of horses and plows on ways and trail construction means an important increase in the number of men and horses who are expert in the use of plows in the woods and therefore ready to supply expert service with plows in fire fighting.

We are liberally supplied with funds for way and trail work and aggressive development of this work will increase the number of trained fire fighters IN THE WOODS far beyond any increase we have reason to expect in the number of guards secured by increases in our General Expense appropriation. In fact it is an open question whether we will need more GE guards when we have fully developed way and trail programs and the use on fire fighting of workers needed to carry out those programs. Some of our most striking achievments in fire control seem to be due in large part to skillful correlation of GE, trail funds, FF, regular guards, trail workers and emergency guards.

Progress in way and trail construction has been disappointingly slow on many Forests. We seem to have underestimated the job of organizing and executing such work. The policy we have all subscribed to of limiting way and trail allotments to what Rangers could handle economically now seems to be inadequate. It is clear that a supplemental organization is necessary on many Forests. So far as we here have been able to see, the best way of doing this is to employ one or perhaps two Assistant Supervisors on each Forest where way work is important, such men to take charge of planning and locating way systems, hiring, training, etc., of way crews and the general development and correlation of fire control activities.

Sufficient qualified men may be hard to find. They must be thorough woodsmen with the woodsman's gift for rapid and correct location of ways and trails. They must know men and how to get work from a large number of men scattered over the Forest. They must not only know fire work but be adept at training trail workers in efficient fire fighting, and expert at weaving trail forces, Rangers, regular guards, timber sale men and cooperators into a close knit organization for preventing and suppressing fires.

We have probably attempted to carry way and trail work with insufficient District Office overhead. Such men as well as the Assistant Supervisors referred to can of course be paid largely or wholly out of trail funds.

To the extent that the foregoing views of the way and trail problem are correct I should like to see a considerable increase of such activity next season. Headley and I will want to go over the plans you will have developed by next spring, consider with you the difficulties which will come up and get your contributions which will aid in the handling of such work in other Districts. During the winter we will get legal advice on the use of Forest Development funds in snag felling, clearing along roads and other fire proofing work so that we will be able to adopt definite policies on such ,matters.

PREVENTION AND COOPERATION

On page 54A of the Manual under the heading "Analysis of Man-caused Fires and Focus of Educational Work" are some definite requirements. I shall want to ask you next spring to what extent they have been carried out.

Districts 7, 3 and 6 seem to have found in the fire truck with its trained man, its motion picture and other equipment a means of transforming woods burning communities into supporters of forest protection. Should there be more undertakings of this kind? What other specific prevention projects do you intend to push as a means of remedying definite causes of fires which analysis has disclosed?

Are there not many places in which we should go after berry pickers or brush burners fires with sympathetic but persistent effort? Are we sure that such groups can not be induced to organize and take adequate precautions in return for recognition of their own needs?

The cooperation secured on certain Forests particularly in Districts 2 and 7 and Southern California prove that this resource may become a powerful aid in fire prevention and suppression when Forest Officers aggressively develop it. But cooperation is very spotted. Occasionally we even come across logging and sawmill outfits who do not seem to have been led to take their proper place in forest protection.

I should like to go over your plans for prevention and cooperation activities, particularly specific projects aimed at definite causes of fire and classes of local people. I shall want to consider fire law enforcement, the results obtained from it, the reasons for so small a percentage of man caused fires which are followed by law enforforcement cases and ways of getting better results.

PLANS

The requirements set forth under the heading "Plans" at the bottom of page 52A and top of page 53A of the Manual seem workable and important. It is our impression that too often they are not well carried out in actual practice. It is hard to understand why in so many instances prevention and presuppression jobs which could be cleaned up during the winter and early spring are left to be done after the busy field season or even the fire season opens. There must be some way of securing more generally the excellent organization and execution of Ranger fire work which we find here and there. To fail to get full preparedness for the fire season is to invite avoidable fire losses. Full preparedness is largely a matter of system and good planning in the use of forest officers time.

We will want to consider how far your district has advanced in this respect and your policies and programs looking to further advance.

DETECTION

We need to know the extent to which detection can be strengthened by (a) placing firemen on secondary lookouts and (b) preparing additional lookout firemen stations to be occupied by emergency guards in periods of extreme danger. We will want to review the progress you have made and plans for the future.

CLOSURES

We have now had enough experience with closures to enable us to judge their value more closely and reformulate policies. I shall be glad if you will collect such statistical and other data as there may be available to aid in our discussions of this subject.

GOVERNMENT LOGGING FOR BETTER SALVAGE, UTILIZATION AND PROTECTION.

By Philip Neff, D. 1

The present widespread prejudice against expansion of Governmental activities is, no doubt, the reason the Forest Service is not now doing considerable logging.

Practically all other large timber-growing organizations throughout the world transport there wares to market, while we have depended entirely on selling ours on the stump. Agriculturalists and horticulturalists find it essential, if they are to succeed, to not only take their products to market but to market them intelligently.

It might be all right to depend on unsympathetic operators for the harvesting of our crop if our forests were accessible, well developed, and easily protected. When the reverse is true, can we afford to be entirely dependent on such operators?

District One is at this time faced with salvage, utilization, and protection problems any one of which is staggering in extent. Without doubt, development is the answer to them all. We do not expect others to build our roads, trails, and telephone lines for protection, but we depend on others to develop our forests for utilization. At present we have approximately a billion feet of fire-damaged timber which we are depending on someone to harvest for us. Present indications are that not to exceed 10% of it will be sold at stumpage rates which are little higher than the cost of administration.

Are we to continue raising timber indefinitely with little concern as to how we can market it?

Recently we have required purchasers of timber to construct railroads into certain tracts. Although the cost of railroading the logs is little more than driving them and the logs railroaded are worth $6 per M more than if driven, the operators would have continued driving indefinitely. This, in my opinion, is only a first step in the distance we must go for the proper salvage and utilization of our crop,.

Protection must be accomplished. Public opinion, in general, is more and more on our side for full protection. Nevertheless, the people living in our forests and the woodsmen operating in them have little vital interest in their protection. Cannot this vital interest be best developed by our holding the purse strings in such a manner that these people will realize they are dependent on the forests and not on the lumber companies?

Will forestry ever be a success in this country unless foresters bring their wares to market in an efficient manner?

THE BRADY GRAZING TRESPASS CASE

By Will C. Barnes, Washington,

Payment by the defendent in this case, The Columbia Cattle Company, permittees on on the Coronado National Forest in Arizona, of the full amount asked for by the District Forester, closes a case which has attained no small amount of notoriety, due largely to its discussion at the hearings of the Senate Committee in Tucson. The case covers several pages of the report of the Senate hearings, the testimony generally being strongly adverse to Forest Service methods in prosecuting the case.

The facts are that this company owned principally by R. G. Brady of Tucson, one of the old time range cattlemen of the Southwest, had been grazing for at least 2 years several hundred head over and above the permitted number. Every possible effort was made to get them to remove the cattle and pay for the value of the forage secured in trespass. Mr. Brady fought the case vigorously, although he finally removed the stock. The Service claims that more than 500 head of cattle were in trespass for more than six months although Forest officers were sure the cattle had been on the Forest for a longer period. It was felt, however, that proof of six months trespass could be clearly established. The matter got a tremendous lot of publicity. Mr. Brady made open statements that he would fight the case to the bitter end before he would pay a single dollar of what he considered an unjust charge. The United States District Attorney at Tuscon, a close personal friend, pleaded with Mr. Brady to settle the case out of court but without success. He then asked authority to offer a settlement for one-half of the amount the Forest Service claimed, feeling that Mr. Brady would probably accept rather than go to court. To this request the Secretary advised Mr. Wright as follows:

> "Owing to the nature of Mr. Brady's statements before the Committee, and the publicity given them, the Forest Service feels that it has been placed in an unfavorable light in the community. If Mr. Brady did not trespass on the National Forest, he should not be required nor does this Department wish to be instrumental in persuading him - to pay one dollar in damages. The record shows that during the two years preceding the year of this trespass Mr. Brady was warned of having excess cattle on the Forest. The Forest officers now allege that he has repeated the act a third year, and are very desirous of putting a stop to the practice. They have absolute confidence in the strength of the Government's claim and their ability to sustain it. They are anxious to justify their attitude before a court of law," if necessary.
>
> It is recommended that Mr. Brady's offer to pay one-half the amount claimed be rejected and that suit for the entire amount claimed be instituted."

A check in full in settlement for the sum originally demanded by the Service closes a case which has achieved almost as much notoriety throughout the Southwest and has been watched by the stockmen generally with as much interest as the famous Fred Light case.

LOOKOUT TOWER

Suppose that after reading Neff's article on the possibilities of Government logging each of us sits back and says nothing about it.

Some of us doubtless know his contentions are absurd. Others are sure he has, in our expressive slang, said a mouthfull. Still others do not know whether he is right or wrong. If the Pro's and Con's maintain a discreet or stubborn silence we shall not know. It seems to the editor that Neff has opened the way for a free discussion of an important matter and if you have light to shed on it, the pages of the Bulletin provide the best possible medium from which to let it shine. Being highly non-technical as regards forestry we have often wondered about this very thing and assume there are many other benighted ones among our readers. We beseech you - "Turn on the lights." - Ye Editor.

LOCAL FORESTER COMMENDED

A letter was recently received by Associate Silviculturist Herman Krauch from Dr. Schwappach, who was at one time Professor of Silviculture at the State Forest Academy Eberswalde, and Director of Prussian Forest Investigations. Dr. Schwappach is also the author of numerous books on forestry and is one of the best known of the German foresters. With reference to Mr. Krauch's report on "The Determination of Increment In Cut-Over Stands of Western Yellow Pine in Arizona "Dr. Schwappach states: "I was keenly interested to learn of the methods which you developed as a result of your study . I consider them to be highly practicable and worthy of recommendation. In my opinion, we can also apply your methods to many aged stands in Germany. It pleased me very much to learn through Dr. Monroy of the tremendous progress that has, in late years, been made in forest research in your country and how, in spite of the many difficulties with which you are confronted - because of the condition of your forests - you are solving your problems and, moreover, are obtaining results of great practical value." District 3.

EXTENSIVE CLASSIFICATION IN WYOMING

U. S. Forestry Department, Denver,-

Will you kindly furnish me with any printed information you put out on the 'greasewood,' a bushy shrub covering half of Wyoming, (the other half being covered with sage brush)?" District 2.

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THE GOVERNMENT'S PROPER FIELD IN TIMBER PRODUCTION.

E. A. Sherman

Blame the bloodthirsty editor of the Service Bulletin for this contribution. It was he who called attention to the golden opportunity for controversy presented by Loggling Engineer Philip Neff's article advocating Government logging. Pointing his pen at that article, he deliberately hissed a sibilant "sis 'em", evidently hoping to see the floor strewn with blood and hair, front teeth, gouged-out eyes, broken chairs, and other wreckage of bitter combat.

In the writer's opinion Government logging is about the last activity the Forest Service should ever plan to undertake. It is not so undesirable as Government milling but is open to many of the same objections.

The writer betrays no state secrets when he admits the existence of widespread prejudice against the Government's engaging in business. Much of the basis for this prejudice is illogical and many allegations made in its support are absurd and unfair. Nevertheless its existence must be reconed with as an important fact. When all things are considerred after all it is extremely desirable to perpetuate and still further develop our national trait of initiative and individual resourcefulness.

Simply because some line of work could be done somewhat better by the Government does not in itself justify it as a proper government undertaking. It must be shown that serious public injury will otherwise result or that the change will result in very material public benefits. Government ownership and management of forests were only undertaken when it became manifest that widespread disaster would otherwise result. To furnish a nation with a dependable and constant supply of wood it is necessary (1) to carry a heavy investment in growing timber for a long period through to financial maturity, (2) to protect this investment from destruction by fire, such protection requiring farflung cooperation and application of police authority, and (3) to make heavy investments in labor, equipment, and transportation and manufacturing facilities for transforming the mature tree into lumber or some other usable form or product.

It will readily be seen that the first two, which are essential to the growing of the tree, lend themselves admirably to Government jurisdiction. No private agency can secure capital at so low an interest rate as the Government. This is a most important factor in a business which requires a long term investment. For example, $1.00 at four per cent compounded for 50 years becomes $7.11; at 6 per cent compounded for the same period it becoms $18.42. In order that our wood-using industries may have future supplies of raw material available at reasonable costs it may be a real public necessity to make use of the public credit to a reasonable extent in long term forrestry investments. So also the Government has a tremendous advantage over the private owner in protecting forests against destruction by fires. Public opinion will yield police control and jurisdiction and will cheerfully submit to reasonable restraint during fire danger periods to safeguard its interests in public forests, where the same consideration could not be obtained from the forest investment of some private corporation or non-resident. Finally, successful timber production depends upon a stable, well-formulated policy and continuity of control. It is footless to protect an area from fire twenty-five years and then let it burn up through failure to provide for its protection the twenty-sixth year. Better have saved the entire protection expenditure and allowed it to burn up in the first place. Few individuals have pre-assurance of sufficient funds to provide an established standard of protection every year through a rotation period of fifty years, an advantage inherent in Government jurisdiction.

On the other hand, the government has no advantage over the private operation in logging and milling. In fact it is usually recognized that in merchandizing activities and in activities requiring the employment and supervision of a great deal of labor private concerns operate much more effectively than public. Requirements of sound public policy necessitate safeguards in selling activities and handling public business. Also, where success or failure may depend upon a margin of labor-efficiency over that attained by a competitor, the government's handicap is obvious. For private industry to make a margin of profit by speeding up its operations is considered commendable; for the Government to do so would be counted intolerable.

While there will doubtless come a day when it may be a public necessity for the Forest service to do some logging and milling, it is the writer's feeling that such a day is in the far distant future. It is also believed that when the Service takes up this work, the reason will not be the necessity of salvage, utilization, or protection, but the necessity of improving the conditions of the forest itself and of using the only method by which we are able to get essential work done satisfactorily without excessive costs. Really it appears to the writer that this is as it should be - wide extension of the Government's activities in fields suited to its advantages restriction where it is at a disadvantage. The practical result is that although the Government owns and protects a tremendous area of forest, 75 to 95 per cent of the price paid for lumber costs which has been added by labor and other requirements under private enterprise. With approximately 90 per cent of the lumber production field left to private enterprise even on the National Forests and the Forest Service giving its attention to the activities least attractive to private industry and most effectively conducted by a public agency, there is no fair basis for criticizing our position in the industry. In fact our activities along these lines might be increased 100 per cent without arousing as much real apprehension as would the establishment and operation by the Forest Service of one major logging operation.

FOREST FIRES IN THE FAR NORTH

By Charles H. Flory, D-8

(That there is a serious fire problem even north of the Artic Circle is set forth by District Forester Flory, who some time ago made an interesting voyage the entire length of the Yukon. The following paragraphs are "lifted" from a report to the Forester.)

We made an unusually quick trip down the river, thanks to the thorough and careful arrangements which Mr. Theile had made. We left Juneau for Skagway the morning of August 12 and on the evening of August 13 went aboard the steamer "Casca" at Whitehorse bound for Dawson. On August 27 we arrived at St. Michael and the following morning I landed in Nome. Thus I actually spent about thirteen days on the Yukon River, of which only eleven were within the boarders of Alaska.

There were no fires anywhere on the Yukon at the time of my visit in Yukon Territory between Withehorse and Dawson. There had been large fires during July between Tanana and Eagle, but heavy and extensive rains during the first part of August had completely extinguished them. Evidences of old burns are an ever present characteristic of the landscape however.

Two facts regarding the region stand out with striking vividness. First, there is a most amazing attitude on the part of the better class cf local residents in favor of active fire protection by the Government, especially by the Forest Service. Second, the amount of what may be called merchantable timber on the Yukon River and its tributaries, not including the Tanana, is far greater in amount than has previously been reported.

I want here to stress that this universally favorable attitude for fire protection is not a passive one, nor is it academic or theoretical. On the contrary it is urgent and insistent and calls for action. I will cite just two specific instances, illustrating the point, from the many that came to my attention:

Fort Yukon, which as you know is just north of the Artic Circle, is surrounded by an enormous forested region known as the "Yukon Flats", extending for two hundred miles along the big bend of the river and continuing far to the north into the lower valleys of the Chandalar and Porcupine Rivers. There are over eleven thousand square miles in this section. It is a region of many and extensive fires, all caused by carelessness on the part of local residents, mostly Indians. It is an excellent game and fur bearing region, which resource is practically the only local source of revenue at present. At Fort Yukon is located the Arch Deacon Stuck Memorial Hospital and a mission church and school under the jurisdiction of the Episcopal Church. Doctor Burke, who is the resident physician in charge of the hospital, has resided at Fort Yukon for many years. He is an unusual individual possessed with a forceful personality and great capacity for leadership. He has traveled extensively throughout Northern Alaska anc is unusually progressive. He has organized what is known as the "Arch Deacon Stuck Club", the membership of which is made up of Indians, of whom over six hundred reside at Fort Yukon. This Club has for its purpose the betterment of the natives in any way possible. At its regular meetings during the long winter months, the natives have debates, moving pictures, lectures (by themselves), etc. The Doctor has of his own initiative carried on through this culb an active campaign for fire protection. I was amazed at the efforts he has put forth in this direction without direct help, advice, or encouragement on the part of any agency, either federal or private. He has been guided by his own understanding and knowledge of how forest fires are injuring the natives and his altruistic desire to be of help to them. He told me that he believed his efforts were bearing fruit for he frequently overhears natives cautioning one another, when starting on trips through the timber, to be careful not to start forest fires. The Doctor told also of one instance when on a trip through a recently burned area on the Porcupine River, a year or so ago, he had found hundreds of ducks and geese nests with their eggs roasted. When he later related this to the Club it made a very profound impression on those present. The untutored, but nature observing Indians were quick to see the point. The Doctor enthusiastically welcomed my offer to send him literature on the subject of forestry and forest fires.

The next instance occurred at Ianana. I happened to be sitting by the stove at the hotel while waiting to change from one river steamer to another. There were six or eight old timers of the "sourdough" type loafing around the fire. Although they perhaps knew that I was connected with the Government in some way, I am quite sure they did not know in what capacity. I made a general remark about forest fires. The effect was startling. For an instant I thought I had unintentionally committed some indiscretion by the way the several men commenced talking and swearing and denouncing the Government for not taking any hand in protecting the country against forest fires. Instead of enemies however I found a group of friends who wanted and who would welcome assistance. Later I discussed the situation with U. S. Commission-Howard at Tanana and he told me that the local feeling was so strong against forest fires that he believed there would be no difficulty whatever in getting juries to prosecute offenders.

Strange as it may seem, even at Nome I found a strong sentiment against fires, although there are no forests or even trees within many miles of the town. The whole country is a dreary aspect of tundra but the people don't want fires on their tundra because it destroys the reindeer forage, spoils their bird hunting, and makes their living conditions more dreary. They have enough gloomy weather from fog and rain as it is without having their short summer season made disagreeable by a pall of smoke. Smoke also makes travel over the trackless tundra much more difficult and sometimes even dangerous just the same as a fog.

To me it is a strange and interesting thing to find this extensive public attitude in favor of fire protection up under the Arctic Circle and to contrast it with the intense antagonism and hatred which the Forest Service experienced during its early days in many parts of the western States. I believe however that the reason is simple. In the first place, the men of the far north, the "sourdoughs" have had to fight their way against nature and the elements, in a way never known even to the pioneers of the West. These men have learned by hard and practical experience that forest fires are their enemies and are to be deplored. Secondly, and equally important I am sure that the constant campaign against forest fires carried on by the Service over a period of many years has had an unconscious but nevertheless real reaction in the minds of the people.

A DAY IN VIRGINIA

By Paul G. Redington

I left Washington at 6:35 P. M. on November 5, for a trip of two weeks through the Dominion State. I had not been long seated in the smoking compartment before the other occupant and I began to swap lies, and I shortly found out that he was President of a wood fiber company that turns out 100 tons of pulp a day.

The company operates in east central Virginia - and uses the wood of the loblolly pine. The supplies are obtained in part from logging operations of other concerns, the small stuff left by the loggers being picked up and hauled to the mill. The company itself also owns a considerable area of pine and is gradually acquiring more. The executive did not appear to believe that there was danger of exaustion of raw material, nor was he concerned about fire in commercial stands of timber, since fire in his opinion, does but little damage to the large trees. Upon being questioned as to damage done to the young growth he confessed ignorance as to what actually happened there.

Leaving Petersburg early the next morning I traveled 40 miles by train through a wooded country where loblolly pine was the predominant species. It was very much in evidence, showing up now in dense stands of large trees and again as young stuff on ground which still showed the plow furrows. The right of way of the railroad has been cleared of inflammable debris in some places; in others a dense growth of dry sedge grass reached from the woods to the edge of the ballast. I did not, however, see any signs of recent fires.

I arrived at Nottaway at 8:30 and was instructed by the station agent to follow the mail carrier, which I did, and after going about half a mile I reached the Post Office. The postmistress was there and when she learned that I was to attend a fire wardens' meeting in the Court House across the pike gave me her opinion, in the charming dialect of the Southerner, that people ought to wake up to an appreciation of what fire did to the woods-meantime measuring out staple articles to darkies who had come in to trade.

It was a hospitable and pleasing introduction to Nottaway. Presently the County Clerk came in, was introduced to me, and invited me to join him in a bottle of cocacola, which I did. He then led me across the road to the Clerk's office, but our arrival there, at 9 A. M., was coincident with the arrival of four people - a minister, an elderly man, an embarrassed youth, and a very pretty blushing bit of femininity. I stood outside but could not help hearing the sonorous tones of the minister as he read the wedding service and pronounced his blessing on the happy couple. I did see the father kiss his daughter goodby and the bridegroom assist his newly acquired partner into a brand new jitney. I viewed the old Court House, constructed long before the Civil War, of typical colonial type. In front of it was a monument erected soon after the close of the war as a memorial to the men of Nottaway County who gave their lives in defense of the South. Back of the old Court House was the jail and from one of its barred windows gleamed the whites of the eyes of a solitary gentlemen of color incarcerated there.

The janitor of the Court House was a darkey of middle age who told me that his father had held the same position all his life.

Presently the Chief Fire Warden of the county came along, also District Forester Andrews arrived from Charlottesville, the local wardens appeared, and the war of words concerning forest fires was on. A ver. estimable type of men these wardens mostly farmers of tobacco. They displayed a real interest in their jobs, which pay them - when they work - 35 cents an hour.

At noon we were taken to a fine old house for dinner, and when the dozen of us looked into the dining room we viewed the following dishes, under the load of which the table literally sagged: Brunswick stew, roast pork with gravy, fried chicken, mashed potatoes, candied fried sweet potatoes, corn pudding, butter beans, tomato and lettuce salad, tomato sweet pickles, raised biscuits, baking powder biscuits, green tomato pudding, sweet potato and cocoanut pie - Oh Boy!- candied baked apples, coffee,

There was only one defection from the ranks. The District Forester balked at the pie because it was too rich. Otherwise the dozen men rolled a perfect score.

The dinner was presided over by a charming old lady of the South whose ancestry goes back to the Revolution or before. An oil painting done in the colonial days by the famous artist Sully, hung on the wall. It was of a beautiful girl, an ancestor of the hostess. It hung on the same wall during the Civil War. The house was occupied by soldiers who ripped the painting from the frame and there is a small hole in the canvas where a bayonet pierced it.

In the afternoon District Forester Andrews and I drove to Farmville where we spent the night, I learned much about the tobacco business from Andrews, who before he entered forestry was a farmer. We passed through beautiful rolling country where shortleaf pine was the principal species, rapidly taking over the fields which not so long ago were in cultivation.

The incidents of the day will live long in my memory. The tales I had read of Southern hospitality were proved to be true beyond the preadventure of a doubt. But Andrews and I were perfectly agreed that an evening meal had no place in our program,

DISTRICT 4 COMBINES RANGER MEETING WITH WOODS SCHOOL

Forest officers of the Targhee, Teton and Caribou Forests recently assembled in the woods at Big Springs on the Targhee Forest under the direction of C. B. Morse, Chief of Forest Management, to analyze the needs of Forest administration and, as District Forester R. H. Rutledge expressed it, to learn how to do things on the ground.

Mr. Rutledge told the rangers that during the past six years the force in the intermountain district although reduced 30 per cent in numbers knew more about this job and was handling it better than ever before. During this period the greatest progress in fire protection in history has been made. This has been accomplished by taking the problem to pieces, analyzing it, and working it out piece-meal. Mr. Rutledge said that for this reason grazing controversy had made Forest officers get down to cases and analyze the policies in a way that was good for them. He stated that in the Internmountain District of National Forests there was no further need to ask for greater appropriations, as the present force can handle any increased work in sight by planning and by standardizing. Plans mean analzying and systematizing. He cited combination of two ranger districts which had resulted in the bigger job being handled better by one man than formerly by two.

"Standards will not hurt initative," said Mr. Rutledge, and mentioned Secretary Hoover's accomplishment in reducing the forty six different sizes of bricks to one size which will serve the same purpose as forty-six. Mr. Rutledge cautioned the Forest Officers against going in too many directions in the desire to exercise individual initiative. He said the Forest Service must show the benefits of Government administration by the following: Furnishing adequate fire protection at a proper cost; increasing productivity of timber land; increasing productivity of range land, and being able to measure the increase, and convincing the public that it is to their interest financially to do business with the Forest Service. He stated that a bankrupt was not an asset.

Mr. Rutledge advised all Forest Officers to cut out red tape and do business now. "Put our hearts into the work, as it is not how Forest officers talk, but what they do that counts."

WILDERNESS AREAS

At a recent District 2 Committee Meeting Mr. Tinker called attention to Colonel Greeley's article in the October 18 issue of the Service Bulletin relative to wilderness areas. Mr. Tinker said he thought the wilderness area idea was generally misunderstood in the field and the article makes the policy clear. Two or three such areas are up for consideration in the western part of the District and these can be established without sacrifice of economic values depending on the basic policies in administering them. The Wilderness Area Idea in many instances warrants serious consideration. Supervisor Agee of the Bighorn is interested in establishing a wilderness area in the Cloud Peak area. His tenative plan is not to build roads into the region nor permit any hotels, summer resorts or residences. This seems a very logical thing to do.

Another class of reservation which should probably be made is for scientific study by foresters, ecologists, biologists, etc. Areas from 80 acres to one section will probably be required for this purpose. The question should be considered carefully this winter and possibly some of these areas should be delineated.

AS OTHERS SEE US!

An "institute" professing to train applicants for the Forest Ranger examination sends the following circular.

"Suppose you were offered a long vacation in the mountains -- with a cozy home furnished free -- with barns, chicken house, garden tract -- with horses to ride -- with trout leaping in the streams--with bear shuffling good-naturedly along the path before you with timid deer peering from the shadows.

"Suppose that, in addition to such a vacation, you were offered a salary of a couple of hundred dollars a month in return for assuming a few pleasant duties -- WOULD YOU TAKE IT? WOULD YOU HEED THE CALL OF THE FORESTS, THE STREAMS, THE WIDE-OPEN SPACES OF THE GREAT OUTDOORS?

"The Ranger's wife and children can enjoy the wonderful life of the Great Outdoors while he is performing his duties. In the comfortable home, furnished by the Government, they are free from the cares and troubles that beset most dwellers in the cities and towns. The Ranger who is single has every convenience for keeping house and can well care for his little home without any help. Hunting, fishing, trapping, gardening, raising chickens or animals-- CAN YOU IMAGINE A MORE SPLENDID LIFE?"

P. S. The Civil Service Commission is on the trail of the "Institutes that lure the drug-store cowboys with these Arcadian pictures."

ALAN SMITH DROWNED IN FLORIDA

Junior Forester Alan Smith was drowned at Camp Pinchot Ranger Station on Saturday, October 23. At the end of the day's work Smith went swimming in the Bayou just in front of the Station. A toy boat belonging to one of the children was drifting out with the breeze and Smith swam out to get it, overtaking it at a point perhaps 30 or 40 feet beyond where he could touch bottom. He was in the water alone, while Messrs. Wyman and Wakeley of the Southern Experiment Station were in the Station yard. Suddenly, it became evident that Smith was in trouble and he went down without an outcry or much struggle. Wakeley immediately went in after him, fully clothed even to high boots, and brought him up from 12 feet of water. While Mrs. Wyman drove eight miles to Niceville for a doctor, the rest of us applied the usual methods of resuscitation, but without result. Upon arrival the doctor pronounced him dead. There was no water in his lungs, showing that his death came from causes other than drowning. To Wakeley, the Forester has written a letter of appreciation:

"I have recently learned of your unsuccessful attempt to rescue Edgar A. Smith from drowning while he was swimming near Camp Pinchot. While it is to be greatly regretted that your efforts did not succeed, still I cannot help but have a feeling of considerable pride in the way in which you went to Smith's aid encumbered, as you were, with field clothes. Actions of this character by the field force typify the spirit of sacrifice and of service which exists in our organization.

It is with pleasure that I write you this letter to let you know of my appreciation of your heroic act." - District 7.

AMERICAN FOREST WEEK 1927

At a meeting of the Executive Committee of the American Forest Week Committee, held in Washington on October 26, it was agreed that the American Forest Week observances for 1927 would be held during the weekly period beginning April 24. This period coincides with that chosen by the Canadian authorities for their observance of "Save the Forest Week."

Mr. Shirley Allen, of the American Forestry Association, was appointed secretary of the Committee, in place of Mr. Hamilton, who resigned from the Forest Service last July.

TRAIL GRADES VERSUS HAND WORK

By M. B. Mendenhall, Flathead.

Now that the naturalists have settled the important question of whether a lion screams, and the packers have exhausted the pros and cons of Deckers versus Sawbucks, its seems fitting to present a more constructive subject for discussion, viz., the use of the plow and grader on trail construction.

From the time the plow and Beatty trail grader were first put in use to the present time there has been considerable opposition to their use by a large number of the personnel. This was due in part to natural oppostion of a new, untried innovation, which they were sure would work only under the most favorable conditions.

From two season's experience with machine grading on the Flathead, I have found that where graders can be used trails can be built faster and cheaper than by hand work; also, that the plow and grader can be used in almost anything but solid rock. We have made trails with the plow and grader where the boulders were so thick that there was hardly enough soil to fill the crevices between them. It is easy to make a very good backslope with the plow and grader without any hand finishing. I have just completed eight miles of primary trail that was all backsloped with the plow on sidehills which averaged from thirty to ninety per cent sideslopes. The work was done by starting at a proper height above the grade stakes and plowing a farrow to give good footing for the horse. Then, by throwing the plow handles over toward the bank it was possible to plow the backslope to the desired angle down to the level of the grade stakes. After plowing the sideslope, a round or two with the grader completed the trail; no hand finishing was done. One thing is very important in plowing a backslope, be sure and start high enough above the grade stakes. If too high, it is very easy to plow down to grade, but if too low the backslope will be spolied and will have to be finished by hand. While the backslope made by the plow will not be so pretty, and in places the plow marks will be plainly visible, it will be just as practical and useful as one made by hand work.

In comparing the completed trail with hand-built trails, the grader-built trail proves to be much superior. The grader leaves an even, well-packed tread, which stays level, and a comb on the outer side of the tread which lasts. A comb which is made with mattocks rarely lasts long as the soil is loosely piled on top of duff, needles, etc., and soon sinks away. In hand work low spots in the trail are racked full of loose dirt which soon packs and leaves an uneven grade.

With the plow and grader, it is possible to construct sidehill trails cheaper than they could be formerly made by following the flats.

When not needed for grading the horse is used in clearing the right of way, particularly in pulling small stumps. This is a great saving over the cost of blasting them.

FOUR NEW RECREATION AREAS DESIGNATED IN CALIFORNIA FORESTS

In continuance of the new policy of the U. S. Forest Service to conserve for public use areas of outstanding scenic and recreational value, Secretary of Agriculture W. M. Jardine has designated four additional tracts of National Forest land in California to be held for all time for the outdoor life enjoyment of the people. The newly created recreation areas are:

1. Salmon River Alps in Kalmath, Shasta, and Trinity National Forests, - a tract of 136,000 acres covering the headwaters of the Trinity and Salmon Rivers, and said by mountaineers to be one of the outstanding "wilderness" regions of the State, noted for its scenic wonders and fine fishing and hunting.

2. Echo Lake and Desolation Valley in the Eldorado National Forest, comprising 58,000 acres along the crest of the Sierra Nevada. This popular summer outing region is well known to vacationists and offers unusual opportunities for all forms of sport and enjoyment.

3. Lakes Basin of the Plumas National Forest, a wonderful vacation land of 9,050 acres located south of Blairsden on the Feather River and including Mt. Elwell (7,866 feet), on which is located a Forest Service fire lookout observatory ,and the noted fishing waters of Long, Gold, and numerous other lakes.

4. Reversed Creek in the Mono National Forest, a high Sierra vacationland of 22,000 acres surrounding June, Gull and Silver Lakes, the home of the golden trout, and some of the finest fishing waters in California.

These four new recreation units, combined with the Mt. Shasta, San Gorgonio Range and the Laguña Mountain areas recently created make a total of more than 275,000 acres of national forest land in California set aside primarily for recreational use. - District 5.

ARMY PLANE SOWS TREE SEED

Honolulu Hawaii, August 2. - An airplane sowed 800 pounds of tree seed over the burned section of the Panaewa Forest, Island of Hawaii, during recent experimental flights. It was found that one plane in a single flight could distribute more seed than could be planted by a force of ten or a dozen men in two weeks' time.

Service Bulletin

U.S. FOREST SERVICE

(Contents Confidential)

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FIRE LINE CONSTRUCTION BY MACHINERY

By S. B. Show, District 5

During the week of October 24 a unique and successful experiment on the feasibility of building fire lines with machinery was pulled off on the Shasta National Forest. The experiment was made possible through the courtesy of the Robinson Caterpillar Tractor Company and the Russell Grader Company, both of which concerns loaned their equipment and furnished men to operate the machines. Several D. O. and Forest officers were present at the demonstration, and motion pictures of the experiment were taken by Paul Fair and a camera man working for the tractor company, which will be available for Forest Service use.

The first test consisted of the use of a 10-ton "Caterpillar" tractor and 5-ton Super-Mogul road grader with a 12-foot blade making a single trip through the heavy brush of the Shasta plateau. This brush was a mixture of manzanita, chinquapin and snowbrush ranging from three to six feet in height and varying from moderately dense to very dense. A single trip made a clean line of 2½ to 3½ feet wide with about 95 per cent of the stools dragged out up a 5 to 10 per cent grade at the rate of one mile in 45 minutes.

Subsequently the grader was run on a back trip along this same course, giving a cleared line from 4 to 5 feet in width to mineral soil. This two-trip line would be adequate for use on back fire on most fires. By making two additional trips over the same line, or a total of two round trips, an 8-foot motorway with reasonably smooth surface was made. Counting out the time for delays in turning the tractor and grader, freeing the grader blade of brush, etc., the equipment would average at least one mile per hour or a mile of finished motorway in half a day.

The chief operating difficulty in dense brush proved to be the tendency of accumulations of the brush to hang up on the front edge of the grader blade. This did not prove to be particularly serious because be backing up a few feet and slightly changing the direction of travel the blade could always be cleared without hand work. The most severe test made of the equipment was a hill of 36 per cent slope with numerous large loose rocks under the surface of the ground. Running parallel to the slope and slightly down hill the equipment performed as satisfactorily as it did on gentler slopes and there was no serious tendency for the grader to sideslip down the hill. On one short run, the "Caterpillar" pulled the grader on this side hill up an adverse 22 per cent grade, cleaning a narrow line of brush and rock.

A later experiment was made in heavy brush which had been heavily burned this summer. In this test, due to the perfect cleaning of the grader blade and the lowered back pressure caused by balling up of bunches of brush, the entire blade of the grader could be sunk from 6 to 10 inches into the ground. One round trip made a road 9 to 10 feet wide with all brush roots pulled out and sheared out to the side of the road.

Through the courtesy of the Fruit Growers Supply Company, Supervisor Durbin of the Lassen was able to bring to the Shasta experiment the modified V-shaped drag used by that company in building fire lines on their property. This drag has sides 8 feet in length, a width of 4 feet at the back, and weighs 4600 pounds. When drawn by the tractor through dense brush this device proved successful in opening up a trail and pulling out most of the brush and roots. In most cases it was not successful in eradicating the snowbrush, which has a tremendously powerful root system, but it did dispose of the manzanita and chinquapin. A single trail made with the drag opened up a place for a large crew to work from. Subsequently, a second trail was run parallel to the first, leaving a crest from 2 to 3 feet in width between the two trails. After this was done the grader was run so as to shear out the crest and to touch up the spots which the drag had missed. The result of the three trips was a passable motorway from 8 go 9 feet wide. An additional trip with the grader blade set to level off would have made a very good way for motor transportation.

The complete success of this experiment is evident when we consider the saving in cost that may be made as compared with hand work. To brush out a lane 8 feet wide through brush as dense as was encountered on the Shasta would cost not less than $125 to $150 a mile, and this would not accomplish any cleaning away of the litter or grubbing out of brush roots to make a line comparable to the one made with the tractor and grader, which would probably cost not less than $400 to $500 per mile. With the tractor and grader and a 3-man crew, the operating cost, including maintenance, would average about $5 an hour or $40 a day. As previously stated, four trips will make a satisfactory motorway at a cost of about $20 a mile. In recently burned brush this can be reduced to $10 per mile.

Another experiment of a different nature was made, designed to determine the practicability of using a tractor for pulling a loaded wagon on which could be transported supplies and equipment. The only wagon available was an old wooden four-wheeled logging truck. The tractor hauled this with ease through a dense thicket of pole timber which had been killed by fire a year or two ago. On many fires this method of transportation would save enormously in the servicing of camps remote from roads and with no trails built for pack stock.

The cost of the "60" tractor is $5500, equipped with special armor and electric lights. The 5-ton Super-Mogul grader costs $3000.

District 5 men are very enthusiastic about the possibilities for rapid and cheap fire line construction opened up by this series of tests.

PRIVATE PAPERS OF P. PALUSTRIS.

(This is the first of a series of six letters adapted by the Editor from a single semi-official communication in which certain phases of Service work and policies were discussed in an unusually frank and refreshing way. The next will appear in an early issue. -- Editor).

Dr. John D. Recreation,
Pomona, Mass.

Dear Doctor John:

Ever since the receipt of your letter of February 23, in which you broached the subject of the best use of your time this summer, I have been planning to write you not merely with official brevity but at considerable length, carrying on in a monologue what one might truthfully describe as a continuation of some of the dialogues we carried on when framing the original outlines of our National Forest recreational policy.

With Major Kelley I have recently

visited the two units of the Florida National Forest and four of our new National Forests created on military reservations under the provisions of Section 9 of the Clarke-McNary Law, namely, the Jackson, Benning, McClellan, and Knox National Forests, located in South Carolina, Georgia, Alabama, and Kentucky. On the Florida I thought I saw the need for a slight revision, or rather amplification of our recreation policy.

We have just one spot in the entire Ocala Division of the Florida Forest which is the least bit attractive to campers, and that is Juniper Springs, the source of Juniper Creek. Florida, as you no doubt know, is a region of big springs. That is how come Ponce de Leon to search for the fountain of youth in that region. Juniper Springs is a spring of fresh water boiling up out of the earth and forming a good-sized creek -- oh, I should guess, 10 or 12 feet wide and a couple of feet deep. It is surrounded by some live oak trees, magnolias, and other hardwood such as we find along the streams of that region, excepting along the mid-stream course, where the cover is typical of the sand pine lands such as are indicated in the Ocala division, which is locally known as "The Scrub". We have had no money to improve the area and during the past year there has been a heavy cave-in at the Springs, one of the nearby trees with its burden of roots becoming undermined and toppling over, so that at the time I was there the stream was badly discolored. A little of the brush has been cleared away and I understand that occasional automobile parties come out from Ocala for a Sunday jaunt and stop there. Juniper Springs is within a very short distance of one of the main east and west State highways. Grading has been done on this highway and it will be hard-surfaced this summer. The Springs is located about half way between Palatka, the largest town on the east, and Ocala on the west. When I visited the Springs I was advised by the Supervisor that a great many inquiries had been received from people who wished to acquire it for resort purposes, the plan being to put up a big hotel and develop the Springs and environs as a watering place. The Supervisor felt that we could get most any price we wanted to name for the Springs and a sufficient area of surrounding land for development. But he discouraged all inquirers upon the grounds that the alienation of the Springs would be contrary to our recreational policy, which provides first for free camping for the general public.

And here I was struck with the absurdity of this special application of our general policy. As a matter of fact, in the Florida, and I think the same will apply to all the lowland forests which at all approach semi-tropic conditions, the forest is not the place to which the local people go for recreation. Aside from the few who might visit the Springs on account of its special attraction, nobody would dream of going to "The Scrub" on a picnic. In the typical scrub area there is no grass under foot, the sand pine foliage is not dense, the shade is but a slight protection from the sun, there are few birds, and of all forms of wild life, rattlesnakes are most frequently encountered. Along the streams you encounter fair shade under the live oak and dense shade under the magnolias, but it is humid and sticky.

The plain truth of the matter is that the people who look for recreation in Florida in the winter time are people from the North who are not looking for shade but are after sunshine. The local people, the resident Floridan, or "gator" as he is called by the new comer, needs his vacation in mid-summer much more urgently than we of the North do, and when he seeks a vacation in mid-summer he doesn't go into the humid forest but he goes to the water, preferably salt water. Now when he goes to Juniper Springs he can look at the water, without any possibility, however, of enjoying a plunge. The day that I was there (one P.M. Sunday) we ate our lunch by the Springs under the shade of one of the big trees, the only occupants of the region, and none came near it for the hour or two that we were in that locality; and I thought how absurd to blindly apply the rule without thinking of the principles upon which our rules are established. What we had in mind was to put into effect in concrete form a recreational policy consistent with the general policy laid down for the Forest Service by the Secretary of Agriculture in his letter to the Forester dated February 1, 1905, the day the Forest Reserves were transferred to the Department of Agriculture. That letter was signed by James Wilson and was addressed to Forester Gifford Pinchot. I have always felt, of course, that it was written by Mr. Pinchot himself. I think I shall quote its language as printed in "The Use Book" of 1908:

> "In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people, and not for the temporary benefit of individuals or companies. All the resources of forest reserves are for USE, and this use must be brought about in a thoroughly prompt and businesslike manner, under such restrictions only as will insure the permanence of these resources. The vital importance of forest reserves to the great industries of the western States will be largely increased in the near future by the continued steady advance in settlement and development. The permanency of the resources of the reserves is therefore indispensable to continued prosperity, and the policy of this Department for their protection and use will invariably be guided by this fact, always bearing in mind that the CONSERVATIVE USE of these resources in no way conflicts with their permanent value.
>
> "You will see to it that the water, wood, and forage of the reserves are conserved and wisely used for the benefit of the home builder first of all, upon whom depends the best permanent use of lands and resources alike. The continued prosperity of the agricultural, lumbering, mining and live-stock interest is directly dependent upon a permanent and accessible supply of water, wood, and forage, as well as upon the present and future use of these resources under businesslike regulations, enforced with promptness, effectiveness, and common sense. In the management of each reserve local questions will be decided upon local grounds; the dominant industry will be considered first, but with as little restriction to minor industries as may be possible; sudden changes in industrial conditions will be avoided by gradual adjustment after due notice, and WHERE CONFLICTING INTERESTS MUST BE RECONCILED THE QUESTION WILL ALWAYS BE DECIDED FROM THE STANDPOINT OF THE GREATEST GOOD OF THE GREATEST NUMBER IN THE LONG RUN."

In laying down rules for the granting of special uses and for developing the recreational values of the National Forests we were following the principle of favoring "the greatest good of the greatest number in the long run." In most cases more people would be better served by granting free camping generally rather than giving a permit to someone concern and allowing the commercialization of a special attraction. But as I stood at these Springs and thought of the possibilities of their enjoyment by several hundred people coming in relay after relay yearlong to a large and well improved and managed resort, as compared with their casual free enjoyment for a day or an hour by an occasional automobilist, I could not help but feel how absurdly we in this case were using the talents which Congress had entrusted to us.

Since this is a leisurely monologue I must not proceed with it too rapidly. Therefore I shall now stop to eat, and you shall have more of this anon.

Silviculturally yours,
P. PALUSTRIS.

"It is better to increase the growth of forest material than to curtail the output."

TRAIL MARKING

By Jno. D. Guthrie, D-6.

I have read with interest articles on Trail Markers by Messrs. Ahl, Redington, Morrell, Shepard, and Munro in the Service Bulletin. There seems to be considerable unanimity of opinion that the Forest Service blaze must go. Metal markers are suggested. They are good, but with many thousands of miles of trails in the National Forests to be marked, that total bill for durable markers will likely be pretty large.

I would suggest paint -- just a spot or splash of a bright-colored paint on trees along the trail. The outer bark should be very lightly smoothed or scraped (if a rough-barked species) for a space of about 6"x6" and a daub of paint applied. Use any bright-colored paint you prefer; red, white, yellow, or blue are good. The spot could take any shape---square, diamond, or circle, provided too much time was not taken to apply it; a rectangular space about 4"x6" is enough. The marking can be kept as simple or made as elaborate as you wish. While it is some bother for the ranger or patrolman to carry a can of paint and a brush, this system would require less time than blazing, would be relatively as durable, would be readily visible, would not injure the tree, or the saw (when the log reaches the mill), and would be effective. If the trail is changed there would be no metal marker to be removed and tacked up again; simply scrape off the painted bark with your ax, and the tree is as good as new!

This system is not new, for I understand that it is used somewhat in the forests of Northeastern United States; Shepard mentions differently colored markers as used in the Adirondacks. I saw the paint marker used in several places in European forests, notably in the Black Forest in Germany. There, several colors were used to designate certain trails or trail trips. For example, the "Blue Trail Trip" was so designated on the forest map and on the trees along this particular trail. Then there was a "Red Trail Trip", etc. In some cases I noticed that several differently colored trails coincided for short distances, the splotches of the different colors showing on the trees, one color above the other. Several of our transcontinental highways are marked by such a system. The paint markers are relatively inexpensive, are neat, durable, and effective. Let's try them.

An Irreparable Loss.

District Three has submitted a voucher for payment as follows:

One Cooperative Mule----------$75.00"

If the prevailing tradition anent the absolute non-cooperativeness of mules has any foundation in fact, and what Forest officer will dispute it, District 3 has suffered a real loss. It is regretable that so unusual a mule should have been, as Mark Twain put it, "without pride of ancestry or hope of posterity". -- L. F. K.

WHAT IS THE TIMBER ON CUT-OVER AREAS ON YOUR DISTRICT DOING?

By J. W. Stokes, Boise.

While collecting data recently for a yellow pine site curve, I made a few borings in yellow pine trees released by cuttings around the Anderson mill on lower Fall Creek and around the Myrtle Creek mill. These borings, while not sufficiently numerous to be conclusive, give a good indication of what may be expected in cut-over yellow pine on Site I on the Boise.

Period Required to Grow one Inch in Diameter

	Before Cutting	After Cutting
39 trees, all classes, average	10.45 yrs.	6.0 yrs.
9 trees, now Bull Pine, average	8.85 yrs.	4.40 yrs.
12 trees, now Intermediates, Aver.	7.87 yrs.	4.10 yrs.
13 trees, now Mature, average	11.80 yrs.	5.15 yrs
5 trees, now Over-Mature, average	16.45 yrs.	8.10 yrs.

The Same Trees Grouped by Present Diameter Classes

	Before Cutting	After cutting
4 trees, 12-16" Average	11.75 yrs.	4.45 yrs.
33 trees, 18-30" Average	10.35 yrs.	5.00 yrs.
2 trees, 32-50" Average	15.75 yrs.	6.25 yrs.

The fastest growth made after opening up stand was shown by an "Intermediate" 21.2" D.B.H. growing one inch in three years. The slowest growth made after opening up stand was shown by an "OM" 21.4" D.B.H. growing one inch in 13.5 years. The largest tree bored 47.6" D.B.H. increased its growth from one inch in 11.5 years to one inch in 6.65 years after cutting.

Volume Growth Feet B. M.

Merchantable length of each tree was measured in the field. By estimating merchantable length at time of cutting and using individual DBH tabulations and yellow pine volume table 874-N (Revised by Watts), the volumes were calculated.

The data were divided into two groups as the cutting on Myrtle Creek was much more recent than around the Anderson mill. On Myrtle Creek area trees showed acceleration from 5 - 9 years age with the following results for seven trees:

Diameter breast high range from 14.2" to 25.0" average 19.3"
Volume now 2970 ft. B.M.
Average years since acceleration 6.3
Volume at time of release 2340 ft. B.M.
Volume increase for the period 630 ft. B.M.
Per cent increase in volume for the period 26.9%.
Average volume increase per tree for the period 90 ft. B.M.
Average volume increase per tree per year 14.3 ft. B.M.

On the Anderson mill area acceleration appeared from 17 to 30 years of age except in three cases, two showing ten years since stimulation and one eight. Thirty-one trees average 21.5 years since acceleration.

Diameters now range from 15.5 "to 47.6" with an average 23.6"
Volume now 20,850 ft. B. M.
Average number years since acceleration 21.5
Volume at time of release 12,650 ft. B. M.
Volume increase for period 8,200 ft. B. M.
Per cent increase in volume for the period 64.8%
Average volume increase per tree for period 264.3
Average volume increase per tree per year 12.3 ft. B. M. Indications

The trees now "Intermediates" were the dominant "Bull Pine" at time of cutting. They were growing better than the more crowded smaller sizes now in "Bull Pine" class and continued to grow faster after release. Size of trees had no definite effect on growth after release. There is relatively little difference in the rate of diameter growth between "Bull," "Intermediate," and "Mature" trees immediately after release.

The per cent increase in volume does not increase so fast as the period after cutting lengthens. These two areas indicate that in 60 years the volume of trees of these sizes released by cutting will increase about 100%, other conditions remaining favorable.

ROUGH ON TRESPASSERS

Speaking of persons who seek to appropriate forest lands for other than authorized purposes, Federal Judge Sawtelle recently said: "I intend to grant injunctions where people use the Forests against the regulations and the law without proper permit. I realize the importance of the Government regulating the public domain for the benefit of the public who are willing to comply with the Regulations of the Department and the law, and those people who go out through the country thinking that they can squat upon it or camp upon it or use it as their own, will find that they are reckoning without their host and that it is not permissible at all. I, myself, am a permittee on the Forest and I know the regulations and I know what difficulty those of us who live on the Forest and comply with the regulations have with the people who are not willing to take any responsibility to use the forest in a proper manner. I believe, also, in protecting the miner who locates a claim, if he uses it for mining purposes and in good faith possesses it for that purpose but the man who attempts to use it for recreation or for business purposes or for any purpose other than as that defined by the regulations and the law, forfeits his right. I know that there is a prevalent idea that a miner may locate a claim and if he finds a little stain of ore, can hold the land against all the world and the Government itself. They will have to get away from that because, unless they really discover ore in some fair quantity and are prosecuting the development work in good faith, they have no right to possession as against the Government and they must yield to the Government or to some other person who will take the initiative and prospect it according to law." - District 3.

COMMENTS ON WILDERNESS RECREATION AREAS

I have read the Forester's article on Wilderness Recreation Areas in the October 18 Service Bulletin, and believe his viewpoint "that the wilderness program does nor require exclusion of economic uses and contemplates dealing with them in the most common sense way under each set of local conditions" is the way we have all felt in regard to these areas.

The Acting Secretary's recent Land Classification Orders bring this out very clearly. He says "these lands are not only of value for timber production and stream flow protection but also they comprise natural resources susceptible of many public uses which should be conserved and developed for use."

Again he says "a proper and orderly utilization of timber, forage, water power, and other economic resources shall be allowed within the area.

This seems to line up with the Forester's ideas and certainly appears to be the proper way to handle these areas.

Fortunately on this District the tracts designated as "wilderness Areas" are in the high and more rugged parts of the Forests where the timber for the most part is of low commercial value but does have, a high recreational value and is more valuable standing on the ground than for the lumber which it might produce. - George Miller, D. #5

Reference is made to Colonel Greely's request in tue SERVICE BULLETIN for October 18, for comments on wilderness recreation areas.

With an ever increasing population - a foregone conclusion - "isolation" is destined to be much sought after and increasingly difficult to find. The characteristic "isolation" once supplanted by its competitor, "accessible to the mob", is annihilated never to return.

Isolation should be the dominant characteristic of a wilderness area. The personnel involved in a timber sale or a grazing permit are usually confined to a relatively small territory and ordinarily do not interfere with the dominant purpose of a wilderness area, provided the intensity of grazing or cutting is within reason. A band of sheep with a herder and camp tender can occupy but a small portion of their allotment at one time. A logging outfit employs more men, but the larger its force of men, the sooner it must move.

With the trend away from horse travel, it would seem that trail development should be no drawback to a wilderness area. The key to isolation is therefore "lack of roads." Dana Parkinson, - District 4.

"That old smell of pine and spruce and black smoke goes down to the grave with those who have ever had even a sniffle."

WILLIAM CHURCHILL HODGE

(1877 - 1926)

William C. Hodge, who has been connected with the Forest Service for more than two decades, died suddenly from cerebral hemorrhage at his walnut ranch near Kelseyville, Lake County, Calif., Saturday, November 6. He was born in the State of New York on October 24, 1877.

Mr. Hodge graduated from Phillips Academy, Andover, Mass., and from Yale College with the degree of B.A. He then studied forestry at Yale Forest School, graduating with the first class in 1902 with the degree of M.F.

On leaving college Hodge immediately engaged in forestry work in the Department of Agriculture. From 1899 too 1901 he was Student Assistant and was appointed Forest Assistent in 1902, continuing in this position until 1909. He then resigned to take the post of Deputy State Forester of California, which he held for two years. He was appointed May 29, 1911, as expert by the Secretary of Agriculture for the purpose of organizing the reconnaissance work on the National Forests in District 5. He was later designated a Forest Examiner and continued in this position until 1916 when he again resigned to enter private forestry work. In February of this year he was temporarily appointed as Associate Forester and engaged in a technical study of the major consumption uses of wood in California.

His experience in forestry work was acquired in Maine, Massachusetts, Virginia, Kentucky, Tennessee, Missouri, South Dakota, Colorado, New Mexico, Washington, Oregon, and for the past 17 years in California. In recent years his interest has turned to walnut growing in Lake County, California, where he had built a summer home and planted 25 acres of walnuts. - District 5.

AN EXPENSIVE PET

A writer in the August 16 issue of the Service Bulletin quotes with approval Ernest Thompson Seton's condemnation of the Government's campaign of extermination against the mountain lion, and invites the opinion of Forest Service men upon the subject. I have talked with many stockmen and rarely found one who had not often come upon the remains of lion-killed deer, calves, and colts. As deer or stock are respectively plentiful or scarce, the one serves as the lion's main course, the other as his dessert. Unlike the coyote and wildcat, the lion is never a dweller in cultivated areas and so does not mitigate his game and stock destruction with that of animal pests. He is an undiluted evil, a devil to be fought with fire, an exterminator to be exterminated.

But, protests the writer, he is a beautiful and graceful beast, and should be alloted a part of the deer supply, "to which rights of usage and consummate skill as a hunter entitle him." As his estimated yearly toll is 50 deer, he would seem a rather awkward and expensive pet to keep; moreover, the preservation of the disease germ might be advocated on the same points. He, likewise, has rights of usage and efficiency in business to recommend him and he may be beautiful in form and graceful in movement. But how often does he make himself visible for our admiration? About as often as does the mountain lion. A later edition of the Bulletin contains an account of two human victims of the mountain lion, presumably a part of his conceded allotment. - Cleveland Bulletin

LOCKOUT TOWER -

Guthrie's suggestion of paint-blazes for trails seems a simple and practical one. To be sure an occasional tourist might take to following cattle that had been paint-branded in the roundup, but some casualities are unavoidable under the best system.

How long will paint-blazes last? Some of the experiment station men should be able to give good testimony on this point from old sample plots.

Errata: The November 1 issue of the Bulletin under "Lookout Tower" spoke of "blowing out stumps to get water for pumps." This is a typographical - and topographical error for sumps, which is a very different critter.

Service Bulletin

U.S. FOREST SERVICE
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CALIFORNIA RANGER TRAINING SCHOOL

By A. N. Weber, Sierra.

The California District Ranger Training School opened its second year at the Feather River Experiment Station on the Plumas National Forest. On Monday morning, October 4th twenty-six Rangers and Junior Foresters ate their first breakfast as a unit. A little later, equipped with pencils and notebooks, the group filed into the lecture room to hear District Forester S. B. Show outline the purpose and scope of the Training school. By noon, each individual had a clear conception for his presence at the school, and looked ahead with eagerness at the training to be received for the ensuing six weeks.

Instruction at the school is given by the Assistant District Foresters and their aides of the San Francisco District office. Thus two things are accomplished, training is received from the specialists in direct charge of the policies and practice of forestry in District 5, and personal contact is made with these men by the Rangers.

Field methods and practice are emphasized, and the aim of the instruction given in the class-room is to lay the foundation for field work to follow in the afternoon or the next day. For convenience of field instruction the Rangers are grouped into parties, varying from two to five in number according to the class of work. The crew leader is usually one who has had previous experience in grazing, surveying, mapping, etc. No requirements are laid down for the amount of work to be done. Instead the instructors caution against speed in order that each individual step and the reason for the step will be absorbed. Each Ranger is on his own, as it is up to him to learn all he can, develop his own ability, and work out the mechanics of the job for himself.

The lectures are entirely informal, the students being free to interrupt the lecturer and ask questions at any time. Not only is the Ranger able to ask questions freely but he may also bring up the problems confronting him. Frequently solutions to the problems are brought out by other men who have had the same question arise on their district and have solved it. Thus the entire life of the class-room centers around group discussion. Further still, the lecturer and the students are given a recess of five to fifteen minutes each hour, thus relieving the strain and monotony, especially on the warm days when drowsiness is hard to overcome.

Diversion and amusement are frequent and varied. One night there will be a show put on by the students. The next night will be spent in listening to the radio, playing bridge, or indulging in talk. Quincy, the county seat of Plumas county, is four miles distant and trips are taken into town to attend the movies, dances, or play pool.

However, the chief and most prolific source of amusement is found in the tents each evening. Here, all the great problems, forest and otherwise, are settled for once and for all.

In order to obtain a cross-section of opinion from the twelve District Rangers present and the remaining Assistant Rangers and new men, each man was asked to submit a letter outlining his ideas on the school. The results are as follows:

1. New avenues of knowledge disclosed.
2. Theory and policy explained, and improvements over standard practice left to the individual.
3. School provides opportunity for discussion of methods and conclusions.
4. Efficiency of men increased many fold through attendance.
5. School results in upbuilding of morale through personal contact with District Office men.
6. Association of technical and practical men results in mutual benefit
7. Association of new men with the old men makes for better spirit and understanding.
8. School brings out the ideals for which forestry is striving.
9. Intermingling of the men from the northern and southern districts of California results in a broader viewpoint of forestry.

The above benefits are sufficient to indicate that the D-5 training school is a success. Moreover, D-5 is attempting to place the broad outlook of forestry before the Ranger and at the same time to stimulate ideals which will result in the upbuilding of the profession.

The real success of the school will be judged in the future, when each Ranger returns to his job, and meets the problems that arise in the ensuing year and the years to come. Regardless of the success of the school this experiment will be productive of benefits if for no other reason than the building up of the morale of the service.

LUMBER

By R. P. A. Johnson,
Forest Products Laboratory

The following opinion regarding the definitions for "lumber" now in use is offered in response to Helphenstine's invitation, along with some evidence that the Forest Service has not, after all, been entirely remiss in the matter of defining the word.

"Lumber" as applied to forest products is not good English but is 100 per cent American. The English word LUMBER is defined as "old or refuse stuff, things cumbersome or bulky and useless or of small value." The English word LUMBER was applied in early days by New Englanders to bulky material of small value piled on wharves. Since a large portion of the material was boards, timbers, and other wood products, the word gradually came to designate wooden products exclusively. Thus the American word LUMBER was born and with its birth the English meaning became obsolescent. The "cumbersome and useless" meaning of the word has not passed entirely out of use even to-day, but it does not seem likely that the wood substitute manufacturers will claim the word LUMBER on the basis of that meaning.

Several years ago the Forest Service did a large amount of work on definitions in connection with the preparation of American Lumber Standards. In this work an attempt is made to improve on Webster, as a reference to page 69 of U.S.D.A. Circular 296, "Standard Specifications for Yard Lumber," will show. Here we find the Forest Service standard definition: "Lumber is wood sawed, split, or otherwise cut directly from a tree to definite sizes and shapes." Since such wooden products as shingles, lath veneer, etc., are usually defined separately, the common conception of lumber as used in a restricted sense is the products of the saw and planing mill not further manufactured than by sawing, resawing, passing lengthwise through a standard planing machine, and working to special form."

The Central Committee on Lumber Standards has adopted a modified version of the common conception as the American Lumber Standard definition of lumber. This definition is published by the Department of Commerce in "Revised Simplified Practice Recommendation No. 16, Lumber." It reads: "Lumber is the product of the saw and planing mill not further manufactured than by sawing, resawing, and passing lengthwise through a standard planing machine, crosscut to length and matched."

Webster's definition "passes the buck" to timber, and a "substitute" might possibly slip by the American Lumber Standard definition, but the Forest Service definition while longer appears to be substitute-proof.

UNDERGROUND FIRES

By J. B. Holm, D. 1.

During the past strenuous fire season of 1926 several unusual things came under my observation, among them the treachery of underground fires conveyed by roots.

We may all recall having at some time seen harmless looking stumps standing near a dead fire-line smouldering unnoticed and receiving only the casual glance or prod from the occasional passing patrolman. Perhaps in the course of two or three days, or even a week, fire again broke out mysteriously in that vicinity and all hands were once more desperately fighting the new fire; possibly the patrolman was discharged or put under suspicion or some disgruntled person blamed, but the harmless-looking stump was overlooked.

During a serious blowup on the Quartz Creek fire on the Kaniksu last summer the fire jumped the Priest River and in an hour was rolling toward White Tail, threatening to burn the lookout and destroy the entire Jack Pine Flats beyond. The men on the lookout fled for their lives leaving their belongings behind. During the night, however, the fire subsided and the lookouts returned to their station. In two days this fire was trenched and under control. A part of the old White Tail road which had served as a buffer to swerve the fire from its rush toward the lookout was used as a part of the fire-line. Along the old road stood a large dead snag which burned so persistently that it was almost two days before it was cut down. The stump was buried repeatedly but continued to smoulder like a partially extinct volcano emitting an occasional wisp of smoke. After several days the stump and adjacent burn were considered dead. The patrol had been cut to the minimum. Then one afternoon the lookout on White Tail reported a fire near the old road, spreading rapidly. All available men were rushed to the spot and by midnight the fire had once more been put safely inside a trench.

The following morning, still bristling with the desire to do things to the person or persons responsible for that fire, I decided to make a thorough examination as to its origin. We took the old road between the old and new burn and were just passing the old stump when our car broke through the tread of the roadway. Upon examination we found a root from the old outlaw stump had burned beneath the road and had broken out just 16½ feet from the old snag's base. The course of the root was easily traceable, disclosing the origin of the fire. Had the old roadway held up, the snag's secret might never have been disclosed and the cause of another fire remained a mystery. Had weather conditions been unfavorable the work of the preceding three weeks might also have been lost through the treachery of that root fire.

Another similar incident occurred on the same fire with less serious results, the fire having been discovered and subdued when small. This particular root led the fire beneath the trench for more than six feet before it broke out.

"Of real education and of real information we can not get too much; but of propaganda--we can not have too little." -- President Coolidge.

PRESERVE OR DESTROY?

By E. N. Munn, Washington

For some time past considerable interest has been evinced among some members of the Forest Service toward setting aside natural areas to be preserved as examples of virgin forest conditions. In California, it is understood, the idea went farther than in other regions, and several so-called "experimental areas" were set aside to be preserved in a natural state. More recently, our attentiln has been directed to the fact that the Wheeler and Dusenbury Lumber Company has given to the United States, to be kept in its natural state, a tract of virgin white pine in northwestern Pennsylvania. This tract represents one of the last remmants of the old white pine forest that can be preserved. The Service has recommended that this be made a National Monument rather than retain it in the Service as a Natural Area under a general plan. Recently a letter was received from an Indiana lumberman stating that he had set aside a tract of old growth hardwoods in order to preserve the stand from cutting and other damage. About the time of the Civil War this forest was culled for high-grade oak and no cutting has been done since.

That such interest gets to Congress is also brought out by an act introduced last spring by Representative Aswell of Louisiana to preserve a small tract of hardwood timber in the Red River overflow lands near Alexandria. Although the stand on this particular tract contains some very large and handsome trees and represents a typical southern hardwood forest, it also has been culled heavily for the more valuable species.

Still more recently in the Northwest the District Forester has set aside a tract of seven forties of virgin Douglas fir in the Columbia National Forest in Washington as an Experimental Forext to be kept in its natural state. This area will not only be useful to foresters of the future as an example of the original old-growth forest before cutting and fire, but will also be of value for its beauty and attractiveness. It is certainly hoped that other units of the Forest Service will follow the examples already set and provide for the preservation of these natural areas.

It is none too early now for us to provide future generations with such areas. We who live in close contact with these old forests are so apt to have a feeling of disdain toward them, somewhat like that felt by the early woodsmen toward the forest years ago - the forest is inexhaustible; there are other areas just as good, let posterity take care of itself. It is so easy to prevent the loss of such areas while we have them, and it will be so easy to dispose of them if a mistake is made and too many are set aside now, that we should be all the more watchful to safeguard the interests of the future. I wonder if we as an organization to which the epithet of "idealists" was once applied are as idealistic as we would like to have people think us, or whether our contacts with "big business" have caused us to become "Materialists?" How will we be looked upon by future foresters and true nature lovers? And is not the omission from the Lands section of the new Manual of any reference to preserving Natural Areas except through the National Monument route a sign of this materialistic point of view?

DING'S CARTOON

By Shirley Buck, D. 6

Thinking that possibly no anti-wildlifer will accept the editor's invitation to speak up I shall do so not as one of them but for them. "The greatest good to the greatest number" is easily and properly translated into "the greatest pleasure to the greatest number". Scene two multiplies many times over the pleasure (or fatigue) registered in number one. Let us not fall into the error of wanting to prescribe what shall be pleasure for the other fellow; let him roll his own. Incidentally it does not appear that Mr. Ding has heard of our 9-foot roads.

DEATH RAY FOR FOREST FIRES

A hot July sun beats down upon the Eagle Lake Ranger Station. From within is heard the impatient jangle of a telephone bell. The Ranger uncoils his legs from a cane bottom chair, lays aside his pipe, and steps briskly to the 'phone. A brief exchange of words and the cabin becomes a beehive of activity. Two men, drawing on leather helmets as they run, speed across the open field and climb into a giant Forest Service fireplane. A whir of propellers, a cloud of dust - and the winged dragon fades into the horizon.

The scene shifts to a mountain plateau 20 miles distant. In a brush cover clearing flanked by heavy stands of timber, a hundred men are making a valiant but losing fight against the "Red Enemy" of the forest. Billowy clouds of smoke boil to high heaven; a crackling red-tongued wall of fire sweeps onward. The circle of the inferno narrows rapidly. The last refuge of the fire fighters is becoming a seething caldron.

The fireplane comes hurtling downward from the sky. As it speeds three hundred feet above the tree tops, a cloud of spray bursts from its stern - a downpour of whitish fluid that trails backward like the arc of a rainbow, hanging for a moment suspended in the air and then falling to the ground in a filmy blanket.

The transformation below is miraculous. Flames crackle and sputter a moment, then die to feeble embers; the wall of fire sinks to the ground; the fighters throw their shovels in the air and send up a mighty cheer. In less than twenty minutes nothing remains of the fire but a few smouldering clumps of brush and logs - and the fireplane is winging its way serenely back to its station to await the next emergency call.

This is the way, says John C. King, inventor and mining man of San Fancisco, that forest fires will be fought in the near future. King has just secured a patent on an airplane-fire-spraying invention which he claims will revolutionize fire fighting and save the United States many millions of dollars yearly.

The invention consists of a device for spraying a powerful fire extinguisher from the air, contained in three ingeniously constructed storage tanks attached to the fusilage of an ordinary airplane. The exact composition of the fluid, which the inventor says is nominal in cost, is a secret in King's keeping alone. The spray is not only an extinguisher, but a fire preventive and a fertilizer as well. While it is not injurious to trees and shrubs, it is sure death to non-vertebrate animal life, beetles and such insects. With this new invention safety strips along roads, trails, camp grounds, etc., can be fireproofed; fires extinguished before they assume dangerous proportions, and beetle infestations wiped off the forest map. -- District 5.

"HELLO UNCLE SAM!"

By W. A. LaSater, Fremont.

Recently, I was thus addressed by a hunter. He then said, "I'd like to get a map of the Fremont, Mr. Graves. I've been hunting up on the river, but now want to try the Antelope Mountain region, as I could find only does so far." When handed the map he said, "Thank you, Mr. Graves."

Process of inflation! I said to him: "You seem to have the best of me, I don't seem to recall your name." (I knew quite well I'd never met him.)

He then said: "I have never met you, but was told downtown that I'd find the boss of the Forest at this station, and I saw a couple of your notices while hunting. That's how I knew your name." Process of deflation!

Now, to make a long story longer. The idea is that I have tried to remove those old signs as per instructions from the Supervisor's office, and from the District Office. When this unknown hunter informed me he had (within a short period of time) found two of the H. S. Graves notices, I could but admit that I had failed. Not so good.

In defense of myself and other of my well-intentioned fellow Rangers, I'd like to submit this for your consideration, and ask leniency for the present: The signs for the most part which it is desired be removed were placed from horseback, and are, then, higher than the natural range of vision when driving an auto (or a Ford). Also the road being in timbered areas, is rough and crooked, and one really cannot vision both road and sign at the same time. Now for my suggestion: Take friend wife along (undoubtedly she'd enjoy the outing) to "spot" the objectionable signs, or do as the man did who placed them - take old Dobin (in all too many instances since the advent of the Ford he doesn't get proper exercise, anyway!) and go over the roads and trails; give your districts a through inspection and remove those signs. You will undoubtedly be repaid by having renewed acquaintance with isolated regions which have become almost strange since the advent of the "car".

"Them were the days!" I'm glad this hombre did not mistake me for "James Wilson!" Could this have been true on your district?

PLASTIC PINES

By Philip C. Wakely, Southern Forest Experiment Station.

In the Journal of Forestry for November, 1922, Professor H. H. Chapman described a hybrid pine, a cross between loblolly and longleaf. He proposed calling it PINUS SONDEREGGERI, after its discoverer, V. H. Sonderegger, then State Superintendent of Forestry for Louisiana. The new pine had characters intermediate between those of the parents, and according to Chapman promised high resistance to fire and hogs, combined with remarkable growth and unusual gum-flow.

Nothing was done with this promising hybrid, however, beyond the collection of a few seed, all of which produced typical longleaf seedlings. Now comes a chance to try something more, for hundreds of the hybrid seedlings have appeared in the nursery of the Great Southern Lumber Company at Bogalusa, La., from longleaf seed collected in longleaf--loblolly country in eastern Texas. Instead of being stemless like longleaf seedlings, they are almost as tall as loblolly seedlings of the same age, and much stouter. The needles are nearly as large as those of longleaf.

These "Sonderegger Pine" seedlings are remarkably vigorous, even in comparison with the justly celebrated slash pine, and the company forester is anxious to see if the vigor will persist in the plantation. He is accordingly donating the stock to the Southern Station for experimental work, and it is hoped enough can be found to plant at least half an acre at Bogalusa. In addition, the Station hopes to get some of the hybrids planted in a region beyond the range of either parent, to see whether they will "breed true" to PINUS SONDEREGGERI or , according to Mendel's Law, yield two hybrid seedlings to one each of longleaf and loblolly.

GRAZING REGULATIONS AND POLICIES ATTACKED

A situation has been developing in northwestern Colorado which is requiring a good deal of attention, but one for which there appears to be no satisfactory solution as it bears upon the demands for forest range that are arising in that locality. About 18 years ago large areas of range in the Routt Forest were unused because there was no local demand . Applicants from overgrazed forests in Wyoming were therefore given permits in Colorado, which permits they enjoyed and acquired preferences for, during a period of about 15 years. Between 1921 and the present time, there developed and dropped off again, a cattle demand which was taken care of. Some changed to sheep, sheep ranges were extended, and during the past few years it has been demonstrated that sheep can be successfully wintered in that locality on the production from the ranches. This has created a new demand in competition with the old, established Wyoming users, which take 63% of the sheep range on the Routt Forest. About 80,000 tons of hay are grown in the valleys surrounding the Forest and demand comes from owners of land as well as lessees of property which has reverted to creditors. These people are insisting that Colorado range should go to Colorado applicants AS FAST AS THEY WANT IT, even at the expense of established users. They also contend that it makes no difference whether the application is from an owner or a lessee as long as it goes with the production from local ranches. The Service is urging an economic survey of the ranches in that locality in the hope that some way may be found to profitably establish year round operations on the ranches themselves, thus reducing the demand for forest range which would be insufficient to go with the entire hay production of the locality anyway, if all present stock were removed. A good deal of the problem has been created by the absorption of the public domain surrounding the Forests.- District 2.

HEART FAILURE?

Scaring a coyote to death with a 22 colt pistol was the recent experience of Messrs. Cassidy and Rodriguez on the Chama District of the Santa Fe Forest. A coyote crossed the road in front of the jitney and running up the side of the canyon fifty yards obligingly waited on a log until the artillery could be salvaged from a cantina under bed rolls and saddles in the back of the car. At the first shot he suprised the principals by dropping instead of tearing off at a great rate with his tail tangled up in his hind legs, as is a coyote's usual procedure. After a discreet interval the coyote was approached, poked with a long pole, and showing signs of life, was given another shot that apparently ended his lamb killing days. Upon skinning him but one wound could be found, the result of the second shot. Mr. Cassidy is now figuring on getting rich this winter by scaring coyotes to death with his pop gun. - District 3.

FOREST SERVICE PATROLMAN HELPS BLAZE NEW PATH UP MT. BAKER

As a result of the finding of new routes up Mount Baker and Mount Shuksan, it is expected the summits of those peaks will be the goal of many climbing parties starting out next year from Mount Baker Lodge at Heather Meadows. A trio of mountaineers composed of two noted Alpine climbers and one local climber, recently explored new routes up the two peaks and pronounced them ideal from the hiking standpoint. The party included Miss Dorothy E. Pilley, English writer and mountain climber; Professor I. A. Richards, of Cambridge University, England, also a well-known writer and mountaineer; and Benton Thompson, United States Forest Service patrolman, who acted as guide.

The ascent of Mount Baker was made from Austin Pass up the northeast side of the peak. Only one other party is credited with having made that climb, it being a group of eight members of the Mazama Mountaineering club, who climbed the mountain from that side in 1906. Other attempts since then have been unsuccessful.

In climbing Mount Shuksan the three climbers scaled the northwest wall of the peak, acclaimed by the two European climbers to rival the best climbing expeditions in the Alps. This is also the second ascent on record of the northwest side of Shuksan. The second ascent differed somewhat from the first, in that instead of swinging to the right side of the peak when they reached Price glacier, the party climbed up on the left and north side of the pinnacle and have the distinction of being the only party on record to have explored the huge glaciers on the north, northeast and east side of the mountain. Miss Pilley is the only woman to have scaled Shuksan from that side and Baker from the northeast slope.

The trio was enthusiastic over the prospects of developing their routes for tourists parties. They believed that the trails can be worked out better, made easier and will prove to be successful ascents.

In speaking of the mountains of this section, both Miss Pilley and Professor Richards declared the scenery and grandeur of the peaks to be as fine as any found in the Alps. Miss Pilley holds memberships in the Ladies' Alpine club of London, French and Swiss Alpine clubs, and the Czecho-Slovakian Alpine club. Richards is a member of the English, French and Italian Alpine clubs. Benton Thompson, the third member of the party, is a Bellingham climber and has made numerous ascents of Mount Baker and other high peaks in this region. - The Bellingham Sunday Reveille.

ON THE TRAIL OF THE SMALL SAWMILL

R. D. Garver, of the Forest Products Laboratory, with a crew of three men, has begun a three months' study of the efficiency of small sawmills in the Ouachita National Forest in Arkansas.

This Forest Products Laboratory field party is seeking reliable yield and cost data for small sawmills operating in forests typical of various forested regions. Information is being obtained on the kind and amount of lumber produced by the small mills, the cost of producing it, the losses which occur under present standards of utilization and what may be expected under improved methods of operation. Data useful in stumpage appraisals are also sought.

An important detail which will be decided for various forest types relative to the minimum diameter below which it is more economical to leave a tree for logging with a future crop and above which the tree can be profitably turned into lumber.

Similar studies have already been completed in the Lake States' region.

ABOUT CROOKED HANDLES

Hartwell Brothers, Memphis, Tennessee, state that handles made of "live" young hickory tend to warp, particularly in dry climates, and that this may be avoided by baking each handle throughly in a dry kiln. This is not desirable, because the process deadens the fibres and shortens the life of the handle. It makes the wood brittle. Therefore, seasoning is usually ordinary air seasoning. The wood near the bark shrinks more than that nearest the heart-wood. A parallel grain handle will bow on the flat side while a perpendicular grain handle will buckle along the edge. Flat side bow can be straightened usually by using the handle as a lever, but if it buckles on the edge, it is impossible to straighten it because of grain resistance. So far as this company knows, there is no way to prevent warping unless the handles have been "cooked" to brittleness in a dry kiln. -- District 4.

WILL IS "SOLD" ON FIRES.

"Forests, (in Germany) the most beautiful forests, all out in rows. Every time they cut down a tree it looks like they planted two in its place. Every time we cut one down, the fellow that cuts it down sets down to have a smoke and celebrate. He throws his cigarette away and burns up the rest of the forest."-- Will Rogers in "Letters of a Self-made Diplonat to His President", Oct. 23, 1926.

TRADE CONDITIONS PROSPEROUS

The Land Exchange business is looking up. In one day we submitted to the Secretary, for approval and transmittal to the Department of the Interior, one exchange on the San Juan in D-2 involving 7077.49 acres, one-half virgin yellow pine with an estimated stand of 19,107,00 feet b.m.; and one on the Sitgreaves in D-3, involving 8000 acres, of which, 200 acres is virgin yellow pine and 6,760 acres pinon-juniper woodland, with an estimated stand of 7,978.5 M feet b.m. of saw timber and 60,080 cords of wood. If this keeps on our alienated land problem will soon cease to be troublesome. L.F.K.

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HUNTING CAMPS ON THE KAIBAB

By Walter G. Mann.

Back in 1924 it became apparent that the deer herd on the Kaibab National Forest must be reduced to a number consistent with its food supply. According to Government estimate the herd had increased from 4,000 to 30,000 since the creation of the Grand Canyon National Game Preserve. Forest Service investigations show that browsing of buck brush, or cowania, beyond its annual growth had been going on for several years; that little aspen trees were eaten off and all aspen trees browsed as high as deer could reach standing on their hind feet; and that reproduction of yellow pine, fir, and spruce was being seriously injured.

Several methods of reducing the numbers were suggested: driving to other areas, trapping and shipping to other areas, killing by Federal officers, and opening the preserve to hunting.

The deer drive, in which 75 Indians and about 50 whites participated and which ended in a fiasco, has been given much publicity. Trapping the surplus deer and shipping them to other areas is now being done but affords only small relief because of the expense involved and the limited demand for such stock. Killing by Federal officers would result in an economic waste, which is contrary to true conservation, and was not considered very seriously. Declaring an open season to hunting was the only feasible way to reduce the herd by the numbers necessary to give relief to the range.

"Hunting! Hunting on a game preserve! Whoever heard of such a thing? Why, it would be a crime to shoot into that herd of tame deer; it would be like shooting sheep," said the opponents of the scheme. It was such a new idea that protests were made by lovers of wild life who did not understand true conditions and imagined the Forest Service, who had built up the herd, was now going to annihilate it.

But something had to be done if a second crop of brush and trees was ever to grow and if the deer herd was not eventually to be unnecessarily reduced by starvation; so the hunting method was decided upon as the one that would give quickest relief and at the same time obviate economic waste. If hunting was to be done on the game preserve, it must not be a haphazard affair; it must be under strict Government supervision and absolutely under control all the time, because there would be a lot of deer to shoot at.

Deer on the Kaibab are what might be called tame in summer. They feed near the highway and many times will not run away when autos drive by, being less afraid of autos than of persons on foot. But when the fall drift to the winter range begins they are much more alert and wary; they are wild deer but there are so many of them they cannot all get out of the way.

The first hunting was done in the fall of 1924, and. since it is a National Game Preserve, was carried on under National Forest regulations. Each hunter was charged the same fee and allowed to kill three deer of either sex. The State of Arizona objected to hunting unless under State Laws and made some arrests. Not wanting to invite hunters into trouble and pending the outcome of a court case to settle the question of ownership of the deer, the District Forester decided to go ahead and permit hunting under Arizona laws. This does not afford the relief desired, because with the high nonresident license fee, not many hunters come in.

Definite hunting areas were outlined on the most overbrowsed ranges away from routes of tourist travel Hunting camps were established within these areas, not closer together than eight miles, each of which had a Forest Ranger directly in charge. Camps were in the open and each hunter brought his own tent and bed. Meals could be purchased at a cook tent. Guides with horses were licensed to operate in each camp. Hunters were limited to twenty-five in each camp at one time, in order to prevent accidents and in order that the Forest Service might retain absolute control. Forest Rangers and guides patrolled the area to see that hunters followed the deer they wounded and otherwise observed hunting rules. No hunting was permitted on the summer range.

Two checking stations were established near the Forest boundary - one on the east side and one on the west side. A hunter coming in reported at one of these stations, got license and agreements, had all guns sealed and proceeded to one of the camps. At the camp the ranger registered the hunter, gave him instructions, unsealed his gun, and told him which way to go, so that all would be distributed in the various directions from camp, and recommended a guide. The Ranger stressed the points to go slow, not to hurry, be sure it is a deer, take time and get a good head, not to shoot at the first one, wear something red, take a guid The areas are brushy and sometimes a hunt stayed three or four days before getting his deer, others came in and went out the same day. The guns were again sealed at the hunting camp and unsealed at the checking station on the way out.

In 1926 the State Game Warden of Arizona assigned a Deputy Game Warden to each camp. State officers and Federal officers cooperated successfully in carrying on the hunting plan.

The main points of the cooperative plan as outlined to all hunters were as follows, (omitting details already touched on above):

In order that the number of deer within the Grand Canyon National Game Preserve may be reduced as far as possible under existing conditions, to prevent further injury to forest growth on the Kaibab National Forest, and for the good of the herd itself, hunting will be allowed on certain restricted areas, by the Forest Service and the State of Arizona in cooperation.

Cooperative Plan.

The top of the mountain always will be reserved as a game sanctuary and no hunting allowed there.

Three hunting areas are designated - one on the east side, and two on the west side - in heavily congested areas. Maps may be seen at the camps.

Shooting from automobiles and along roads is prohibited.

Season. October 1, to October 31, 1926.

Guides.

Guides with horses will be at each camp and will make the following charges:

1 saddle horse one day $3.00

1 pack horse one day $2.50.

1 guide one day, $5.00, - limit of four persons to one guide.

It is very necessary to be accompanied by a guide, to avoid being lost, and to avoid losing the deer after it is killed.

Tags.

To each deer killed will be attached a Government seal and a State of Arizona tag.

Reservations.

Reservations for dates to enter the hunting camps may be made in advance by application to Walter G. Mann, Forest Supervisor, Kanab, Utah.

During the three seasons the game preserve has been open to hunting, the following numbers of deer were killed: 1924 - 695, 1925 - 394, 1926 - 553. This is not very many when we know that thousands should be removed where we are removing hundreds now, but it helps a little and has served in an educational way to show the true conditions to those who come to see. There have been no accidents and wounded deer left have been very few. Every year some hunter gets lost and lies out a few nights.

The future plan for the Grand Canyon National Game Preserve provides that the female and male deer be reduced to a number which the forage will support in good condition, probably half the present number. Then by shipping live animals to other areas and by whatever other methods appear practicable, keep the numbers within the food supply. Hunting makes the best possible use of the surplus - it makes a waste product furnish food and sport without in any way injuring the esthetic value of the herd.

Hunting has not made the deer wild on top of the mountain. In summer travelers still see them in big bunches in the meadows where they feed on wild clover.

The success of the hunt is told by the following notes left in the register books of the guides:

"October 9 to 21, 1926, in Big Saddle Camp. Splendid hunting, fine camping, and uniform courtesy from all who serve the public - forester, game warden, and Jim's camp. The latter consists of splendid men who know the mountains."

"Have nothing but praise for our treatment in every way. One place where service is not measured by amount paid."

"I saw all the deer in the United States down on the breaks of Kanab Creek. No fooling."

"Collected group of mule deer. Wonderful time, great country, great men, best time in nineteen expeditions."

II -- PRIVATE PAPERS OF P. PALUSTRIS.

Dr. John D. Recreation,
Pomona, Mass.

Dear Doctor John:

The monologue is resumed. You know Congress has empowered us to acquire privately owned land within any National Forest in the United States by giving in exchange not to exceed an equal value of National Forest land or National Forest timber in the same State. Now, within the Ocala National Forest there is an area of possibly 20,000 acres of cut-over longleaf pine land in a single ownership, much of it well restocked, with here and there scattered patches almost large enough for turpentining. The Supervisor thought the owner of this land would trade the entire acreage for a single section around Juniper Springs, which he could in turn sell for development as a big resort. I told him for Heaven's sake fly to it. If under private ownership this area can be enjoyed by a hundred people where it is now enjoyed by one, let us do it even though the hundred people do pay a fee and the camper now enjoys it without cost. I said "without cost"; but it is without cost to only the individual camper. In an economic sense it costs the public heavily, since there is being reserved for the occasional camper an area so suitable for commercial development that under Florida boom real estate prices it might have a sale value of $50,000 or $100,000.

We have considered this privately-owned cut-over longleaf pine land worth about $3.00 an acre at the present time. Under proper management the ultimate net return to the Government from the products from the 20,000 acres of longleaf pine land which we might get in exchange for one section around Juniper Springs should be sufficient to furnish free meals and free baths at a high-priced resort to several times as many people as would ever eat their own luncheons on this spot if left comparatively in its natural state.

The whole point of the matter is that even the one tract of land in the Ocala Division of the Florida Forest which appears to have some value for recreation purposes is not of such a character as to readily lend itself to any form of free use under such public development as we could ever hope to finance In other words, "the greatest good of the greatest number" will be served by allowing this area to be developed as a commercial resort under private ownership.

On the Choctawhatchee Division I found a somewhat similar condition. The only lands in this Division having any conceivable value for outdoor recreation other than hunting and fishing are lands adjacent to salt water. There is very little shore line under National Forest ownership, but in two or three cases we do own lands running down to the beach. None of these Government lands are now used to any great extent either by the local or visiting public. Somehow the undeveloped shore line does not seem to lend itself to the plans of the individual vacationist or Sunday picnic party, or the family jitney week-end camping excursion. Unless posted and patrolled with markers and buoys indicating depths of safety, with life guards available to answer calls for help, with facilities for renting bathing suits and securing a shower after the dip in the surf, a piece of ocean front does not seem to qualify as a desirable playmate for the average United States citizen. On the other hand, a half section of land with a mile frontage on Choctawhatchee Bay would probably sell for $200 an acre for resort development purposes. Well, that may be high, but I will say $100 an acre anyhow. In the past we have been able to secure at $2.00 an acre just as good or better land for timber production. I think we will be able to do so again in the very near future. I would seriously question the wisdom of an organization which handles National Forests that Congress created for the primary purpose of streamflow regulation and timber production, permanently retaining title to shore acres which it could exchange for lands which would produce 50 to 100 times as much timber, on the off chance of such shore acres being at some time in the future of still greater value to the public for the secondary purpose of outdoor recreation.

So far as the District is concerned the Forester has given no direct orders or instructions as to change of policy. I have, however, suggested to Mr. Kelley and Supervisor Hill that if they are able to secure by exchange cut-over lands within the Ocala Division fully equal in commercial value to a section of National Forest lands, including Juniper Springs, that exchange would undoubtedly be approved by the Washington office. I have also indicated a willingness upon the part of the Forester's office to consider similar disposal of shore acres on the Choctawhatchee Division which may have some value for recreation but which appear to have tremendously greater value for resort development. Again, it is a question of considering "the greatest good of the grestest number in the long run."

I do not believe this in any way does violence to our established policy. It merely recognizes the fact that we cannot always provide free use for the public first, and that it is not always good public policy to attempt to do so. Good public policy requires that we make the best use of the facilities and advantages at our disposal. Other things equal, free use by the public comes first, resorts second, individual summer homes last. But other things are not always equal. Sometimes, as in the case of Juniper Springs, the only area we have at all suitable for public use is worth very little for that purpose and worth a great deal for resort purposes. To my mind, wise administration requires that we recognize such exceptions to the rule and where a given tract will serve the public better by the use which ordinarily is given a second or third preference it should be devoted to that use. In reaching this conclusion I am influenced primarily by units of outdoor recreation service rather than units of revenue.

I must, of course, in this leisurely correspondence consider your leisure as well as my own. This prompts me to put it aside for the present. Please, however, be prepared to have it resumed when the mood again inspires me.

Yours for "the greatest good of the greatest number in the long run",

P. PALUSTRIS.

(This is the second of a series of six letters. The next letter will appear in an early issue. EDITOR).

AGAIN THE OLD ORDER CHANGETH

By E. N. Munns, Washington

Back near the beginning of the forestry movement it was thought that a forest investigator needed only forestry training represented by a bachelor of science degree or at most by a master's degree. This training was, in most cases, accompanied by only a smattering of the allied sciences, such as physics, chemistry and botany, and men with training in genetics and biochemistry were about as scarce as totem poles in Arkansas.

Now that our forestry problems have been more definitely catalogued and a beginning made upon the most urgent ones, it has become clear that many of these problems cannot be solved by broadscale experiment alone, for rightfully to connect cause and effect requires careful education and training of the faculties, and to interpret facts in their proper relations requires most considerate study. In the past few years, the growing list of experiment station workers has exemplified the importance of research and its method, has demonstrated its spirit, and has furnished results which show more conclusively than words can portray the practical and enduring value of that activity. Forestry is outgrowing the more superficial methods and tentative results and while some empirical research is still necessary, ultimately the most practical and valuable results of the experiment stations will be the product of fundamental study. For until permanent and enduring facts are developed, we can have only a shifting and uncertain foundation for practical forestry, and until our understanding is clear and sure, it is impossible to broaden to the full, the understanding and reasoning basis of the forester, timberland owner and operator.

Recognizing the immediate need and as a temporary expedient until similarly well-trained foresters are themselves available, the Service has deviated slightly from its policy of engaging trained foresters for silvical investigations and has recently appointed two forest ecologists. The appointment of these men will bring to the forest experiment stations a point of view which should prove stimulating and decidedly helpful.

Dr. Charles R. Hursh, now at the Appalachian Forest Experiment Station, comes to the Forest Service with a wide training and experience in plant physiology, microbiology, biochemistry, and plant pathology. He received early training at the University of Missouri and later at the University of Minnesota. Hursh has held fellowships at Washington University, Pasteur Institute in Paris, and the Boyce Thompson Institute for Plant Research at Yonkers, N. Y. Prior to going abroad Dr. Hursh was engaged on a cooperative study of the biochemical nature of the resistance of plants to disease for the University of Minnesota and the Bureau of Plant Industry.

Dr. Louis J. Pessin, who goes to the Southern Station has also had an extensive training and experience in plant physiology, genetics, and other branches of botany. Dr. Pessin started in forestry at the University of Georgia but later switched to botany and followed this work with post-graduate studies in plant physiology at the Missouri Botanical Garden. Dr. Pessin participated in a botanical expedition to Jamaica and has engaged in research at the Desert Laboratory of the Carnegie Institution, besides holding Assistant Professorships at the Mississippi and Texas Agricultural and Mechanical Colleges.

The Service welcomes these experts into the fold.

FIFTEEN MINUTES A DAY

By Robert W. Putnam, Fremont

If I succeed in departing from my forte of destructive criticism and somewhat in advance of the Study Course season make what might be called a suggestion, however half-baked, I claim no originality for it. It is already written all over the advertising section of practically any magazine one chooses to pick up. It must be apparent that there exist innumerable shortcuts to the millennium in the shape of Dr. Elliott's five foot shelf of books, Elbert Hubbard's Scrap-Book, Mosher's Bibelot, Books on Etiquette, Self-Starting Piano Playing and so on ad infinitum, all by-paths to "culture." Correspondence schools offer anyone courses in anything --except that there's no tabloid forestry curriculum.

"Fifteen Minutes a Day!" The idea, whatever its shortcomings in practice may be, is at least plausible. These long winded anthologies are assembled around the theory that the reading time of most non-professional students is either ill-expended in the mental ingestion of what is trivial, or wasted in selecting what is not, and that if the selecting be done in advance by experts, the reader's time under their guidance will be more profitably spent. One is probably privileged to doubt that the theory makes sense when applied to the ephemeral quality known as "culture," but contrariwise it seems very likely that so far as sciences may be had from books it would work.

It is not my intention to suggest that study courses similar to that of D-6 in 1924 are useless nor that these be supplanted by any fifteen minutes a day series. I believe the reverse. I suggest that the perusal of American forestry literature in its increasing volume by most field men is at random and haphazard and that any scientific knowledge so acquired is itself haphazard, poorly assorted, probably useless.

Why, then, could not the Forest Service develop a number of reading courses each in a definite field, each beginning with the elements of that field and progressing steadily from simple to complex? Why should there not be available to the forester, as well as to the seeker of culture, an outline of literature which he could follow and be sure he was reading something essential and something that would aid him. I do not speak for technical men but for everyone. It is particularly desirable to find a way of avoiding the inevitable floundering in a welter of the irrelevant experienced by anyone who in the short time available to the field man endeavors to cram for one of the technical exams.

I admit the idea is only half-formed, but it seems that a list of the available literature in each branch would do to start. Where material in one field is pertinent to that in another the lists could be cross-referenced. Each list would note what is fundamental and what is only detail, and each would note what is obsolete and what is unsound. Each list would be progressive, i.e. each would present elementary work first, the most advanced and difficult last. In fields where different practices obtain in different forest regions the material for each region would be grouped. Notices of additions to the literature would appear when necessary. Reasonably elaborate quizzes paralleling the literature would, or at least should, help to precipitate the mud. At least, knowledge is not a solution but a colloid--there is all manner of stuff in suspension.

A guide to reading, that's it! As an example of the value of such a scheme let us suppose that I go into the office library, get out Graves' "Principles of Handling Woodlands" and diligently study the Diameter Limit which has an historical value but none other. Next I find Woolsey who says the diameter limit is obsolete. Well, I've wasted my time with Graves and if I'd had a guide to steer my course this wouldn't have happened. Suppose I read "Principles of Handling Woodlands" clear through, what have I? Why, sketches of four systems of silviculture, forest protection, and an introduction containing a little of practically everything but not enough of each to more than muddle me completely. I have become a mental scrap-heap and the folds of my cerebrum look like a fish-net. I'm not deriding the book but the way I read it. If someone who had read the book could have told me about it I'd have done better.

I have a conviction, firmly though not necessarily well founded, that about an hour's reading a day would be of enormous use to any man if the non-essential were eliminated, and I hereby offer myself as a doer of dirty work to anyone who cares to furnish the brains necessary to eliminate the rubbish.

THE AGE OF IMITATIONS

The imitation and substitute makers are the butt of some good fun in a recent issue of the Journal of the American Institute of Architects, which purports to be reviewing the report of the Committee on Imitations of the National Association of Substitutes, in the year 1950.

"So efficiently has the National Association performed its functions since 1932 that to-day less than 7 per cent of existing buildings incorporate any natural products in their original forms. What this means can be readily grasped when it is recalled that only twenty-five years ago building stones were still used just as they came from the quarries, for the facing of city buildings; that wood, often used for floors and trim, actually showed the grain in the trees from which it was cut; and that sand, gravel, cinders, and water were often employed in the preparation of concrete just as they came from the ground and without the slightest attempt at scientific treatment in the factory.

"To-day, when the real no longer exists in the building trades, imitation in itself is perfection, and comparisons cannot be made. It would be ridiculous for a man to-day to think of comparing his Fiberite, pressed mahoganoid, semi-vitreous, age-proof, self-opening front door with a piece of mahogany, as to compare a can of pate de foie gras expansion entree tablets with a piece of calf's liver.

"During the past year, 1949-1950 several new additions were made to the thousands of Class A Substitutes sponsored by the National Association. The object of the present report is briefly to enumerate and describe these, with a short comment on each.

"Cheese-Crete Air-Proof Mottled Tilettes. A superstandard imitation made by the Brie-Rind Condensing Company. Tilette wall construction avoids necessity for damp-proofing, stuccoing, plastering, or perfuming. Saves 4 minor operations and one major, usually fatal.

"Interlocking Fibrous Garbage-blocks (Creosoted). Utilization of a former waste product. Chicken and meat-bone aggregate, gelatinous binder, tin-can reinforcing. Delivered to job with sanitary wrapping; hardens on exposure to air. Sets in 24 hours. Indigestible.

"Jellibriques and Jellislat. For inserts in walls and roofing where light is needed but aesthetic treatment precludes windows. A transparent product made of cellulose, liquified mica, and jellied consomme.

"Bookpulp (Carneglibrary By-Product Company). A Plastic material made of literary debris from public libraries; pulverized, soaked in solution of synthetic water, and colored. Cost varies according to author.

"Pinkham's Slipsicoat Plasteroil (Decomposed aura and essence of castor-beans). A preparation for concealing wood or stonework in old houses. May be applied directly to any natural product from marble to mahogany, to imitate the imitations now on the market.

Charco-slate, in two forms. One a charcoal-creosote product made to imitate slate, and produced in variegated color-blends. The other, a mastic, adhesive granulated product for spraying over old slate roofs to hide the natural material. May also be used on old tile-work to imitate the modern Slatile Roofing.

"Psychological Conference-Room Machinery. Complete equipment may be installed behind imitation bookbacks, to give sound of two or more typewriters, intermittant telephone bell-ringing, scraping of drafting-stools, and testing of materials with hammer Extra audiphone attachment to give effect of voices, with special records imitating swearing of specification-writer or sub-contractors. Excellent for use during first conference with prospective client.

"Structural Wall-roll (Superspective Paper Company) Beamed or coffered ceilings to fit any room; pannelled wainscots; bookcases full of complete editions of the classics. Also, the same with printed imitation of Plaster-oil covering or book-pulp trim".

RANGER BILL'S TOUR DE FORCE

We recently announced Assistant District Forester Hutchinson's winning the grand prize in an advertising competition. Director Forbes, of the Southern Forest Experiment Station, was quite properly not content with seeing the blue ribbon alone, as shown by his letter:

"Every Forest Service man was, I am sure, glad to read that 'Ranger Bill' brought home the bacon, but why not pass around the bacon - not the five hundred dollars of course, but Mr. Hutchinson's Ad? Is it too long to print?"

One of the numerous virtues of this ad is its brevity (report-writers please note) and we are glad to let our readers see it:

When Comfort Came To Motoring

"Twenty odd years ago a grotesque vehicle called an automobile first coughed and bumped its way along the dusty road. Riding was a nightmare - even dangerous, because the poorly made springs and frame of this new invention transmitted shocks instead of absorbing them.

"As the years went by and civilization progressed, paved highways replaced the dirt roads, while new principles and new standards of design changed the whole idea of motor car construction.

"But something was still wanting - something that neither upholstering, elliptical springs or balloon tires could supply, and that was Smooth Riding under all conditions.

"SPRINGS solved the problem - replaced bump and bobble with a poise as fine as that of an even-keeled yacht, and added new zest and comfort to motoring.

"Equip your car with SPRINGS - ride hour after hour - then note your freshness - it will suprise and delight you."

SOSAWAGAMING

(Upon returning to a fire-swept area of a forest in Michigan)

Five years ago! It seems less than a day Since hungry flames Leaped high above the bay. And through the brush In crashing wide-eyed fear Came wild folk: Porcupines behind the deer! Heavy, rolling smoke Stinging, blinding the eyes, Rolling, mounting heavenward, A monster in the skies. Underbrush went crackling, White birches withered in the flare, A great tall pine swayed Then crashed through the stifling air. Scant yards away (Within our mouths held tight A soggy handkerchief--) We fought our losing fight. Flames cleared the trees By dry limbs at the top, In a clearing we began again with blistered hands, to chop. But tired arms, Eyes burning red and weak, Begged for rest, We ached for water, couldn't speak. A sudden turn Of wind-- cool, clean and strong, Turned toward the lake And whipped the fire along. Over the lake The rolling smoke rose high Then grew less thick, The fire began to die. Tyhen cooling rain Followed the off-shore breeze And soaked the roots Of the smouldering trees. * * * Five years ago! But from the blackened earth Slim young birches rise And sway and nod--as if in mirth!--Corky Lewis, Southern Lumber Journal.

Service Bulletin

U.S. FOREST SERVICE
(Contents Confidential)

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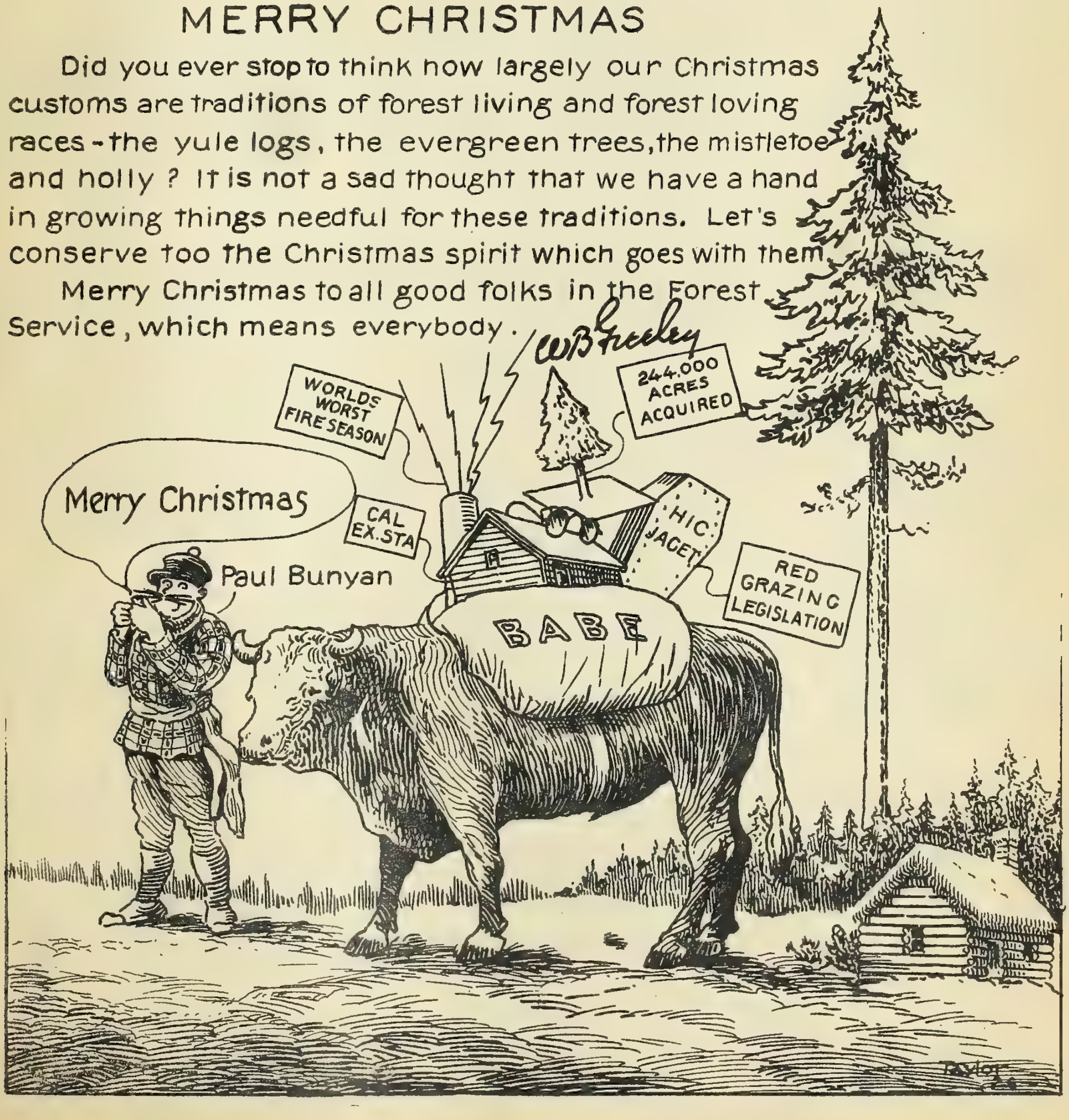
MERRY CHRISTMAS

Did you ever stop to think how largely our Christmas customs are traditions of forest living and forest loving races - the yule logs, the evergreen trees, the mistletoe and holly? It is not a sad thought that we have a hand in growing things needful for these traditions. Let's conserve too the Christmas spirit which goes with them.

Merry Christmas to all good folks in the Forest Service, which means everybody.

W B Greeley


WORLDS WORST FIRE SEASON
244,000 ACRES ACQUIRED
Merry Christmas
CAL EX.STA
Paul Bunyan
HIC JACET
RED GRAZING LEGISLATION
BABE
Taylor

FACETS OF THE WILDERNESS JEWEL

This is our wilderness number. In it you will find presented the opinions of various prominent men who are giving their time and thought to the country's recreational problems. Mr. Kneipp sent them copies of the BULLETIN containing Colonel Greeley's wilderness article and these are their replies.

From Dr. John C. Merriam, President
of the Carnegie Institution of Washington
Member of Committee on "The Relation of the State to Recreation"

Regarding the importance of wilderness recreation areas under supervision of the Forest Service, my thought has been in a state of almost continuous change in the last few years, due to a better understanding of the facts as to importance of recreation and regarding the possible agencies which may direct such activities. I have no doubt concerning the outstanding importance of the National Forests as recreation areas. The great extent of territory offering opportunity for outdoor life and many forms of sport should furnish one of the principal opportunities in the United States. I realize that such utilization of National Forests can be possible only under certain restrictions, among which fire protection is an absolute essential.

Among the areas which will inevitably be available and under protection it is, I believe, essential that certain large tracts be maintained in their primitive condition largely for recreational use with the expectation that they will also make important contribution in other ways, as, for example, in protection of watersheds.

I must confess that I have never been able to obtain a definition or interpretation of the feeling that primitive nature furnishes physical and mental stimulus not derived from regions which man has modified to suit his purposes. Nevertheless, I am quite certain that such a relation exists between primitive areas and modified or cut-over timberlands.

To review the point just mentioned, I recall that Younghusband, the Mount Everest explorer, stated that nature is seen at its best under two types of conditions: (1) primitive nature without touch of human influence, and (2) landscapes representing expression of the highest human effort in building them into works of art.

The second aspect of nature Younghusband thought would be represented by some of the older and more beautiful country places of England. I would agree fully with him. I might even agree that the highest expression of landscape art may correspond to the highest levels of art in other forms, and that it may be difficult to prove that primitive nature is ever more beautiful than art in man-planned landscape.

Even if the man-created landscape were more beautiful than primitive nature, we would, I think, still be compelled to recognize that an element of peculiar interest is expressed in the wilderness - an element that we do not find elsewhere. It has perhaps to do with a feeling that we are here dealing with something that concerns the sweep of creation, and that we are in a sense privileged to see what nature or its creator accomplishes. It probably involves also the satisfaction of curiosity, which is always a dominant factor in the mind of the individual who goes as an explorer into an unknown land. I feel that there are elements here with which we always reckon, but which we rarely attempt to interpret.

Of the several types of agencies that may organize or control units or areas to be described as wilderness dedicated to recreation purposes we are limited mainly to National Parks, National Forests, and State Parks. Of these agencies National Parks will always have certain considerable regions including forested areas that will be retained in primitive state. Definition and function of National Parks are, however, such that we can never expect to see large areas of forests set aside purely for recreational purposes within limits of these Parks. National Parks will naturally and properly represent features outstanding for their scenic beauty and impressive representation of regions having educational and inspirational value.

State Parks will probably develop to large areas with forests among other types set aside solely as playgrounds or recreational regions. In general, the States will have a rather narrowly limited opportunity for securing wilderness areas. The State Parks will in many cases be land specially forested for such use.

National Forests have available among the greatest possible opportunities for preservation of untouched regions favorable for recreational use. Many of these regions will be characterized by exceptional scenic beauty. Others, which might not rank in any sense with National Parks in scenic beauty, would have great value for recreational purposes including camping, fishing, tramping, and mountain climbing. I doubt whether the principle of preservation of wilderness areas for recreation, sometimes known as playground purposes but with an additional emphasis on educational and spiritual value, can be carried out as effectively at the present time by other means as is possible through exercise of the good offices of National Forests.

I appreciate fully the possibility discussed by Colonel Greeley of having two types of areas: one in which the region will be kept in a state of wilderness but not in its primitive state; the other, the typical wilderness area not touched by human influence. I sincerely hope that the Forest Service can utilize both plans. I trust that it will be able to set aside certain considerable regions in which the merchantable timber of the highest type may be of relatively small importance, and preserve them as nearly as possible in the state of nature. It is to be assumed that such areas in general would have other functions than that of recreation as, for example, watershed protection. I believe it desirable to preserve other large areas in which a considerable part of the timber may be harvested from time to time. These regions would probably have among their most important recreational functions the furnishing of opportunity for fishing and hunting. In these areas the timber along the streams would be protected. Much of the timber would be harvested. Large portions of the area would for many decades pass without timber harvesting operations and these regions, under restrictions, would be available for use of the public.

I would urge that so far as possible the Forest Service consider the protection of considerable areas under the first group, namely, regions in which the primitive conditions would be maintained permanently. The argument that this would withdraw from use considerable regions covered by valuable merchantable timber might, I think, be met by the statement that reforestation programs by national and private agencies will take up the slack and cover the economic loss due to non-utilization of merchantable timber in wilderness areas. The fostering of such reforestation plans by the Government and through other means will in the course of time make available through private agencies sufficient areas to cover the loss through setting aside of wilderness areas by the Forest Service.

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From Theodore Roosevelt
Oyster Bay, Long Island

It so happens that I know a certain amount about the problem, particularly in connection with the Superior National Forest in Minnesota. I was in Minnesota this year and addressed the sportsmen in the auditorium in Minneapolis. One of the topics I spoke on then was this Forest.

I heartily agree with the stand the Forest Service is taking. We should preserve under sane regulations some of the fragments that are left of our great wilderness. This country so preserved will give incalculable pleasure and benefit to thousands of American citizens.

I believe most strongly in outdoor recreation of all types, in automobiling and automobile picnics and camps, but the recreationists of our country must not be selfish. It would be wrong for those who love the wilds and forests to insist that no roads were built anywhere. It is equally wrong for those who like automobiling, camps, and hotels, to demand that all of our forests be adapted to this purpose. Both interests can and should be served in the country. Neither should insist on their type of pleasure to the exclusion of the other.

I want to reaffirm how heartily I endorse the policy you are pursuing.

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From Barrington Moore, Member of the Executive Committee
of the National Conference on Outdoor Recreation,
525 Park Ave., New York City

Last summer on the Coordinating Committee trip in the Yosemite I had an opportunity of discussing this subject with Colonel Greeley, and I think we were in agreement on the essentials. His statement may not meet the approval of all advocates of the Wilderness Policy, but it seems to me to represent a practical working out of the more important features of such a policy.

One of the first questions is: Where does the wilderness area fit into the general scheme of National Forests and National Parks? If the National Parks are kept in their original condition, what is the function of the wilderness area? It would certainly not need to have the scientific and educational value of a natural area on which the fauna and flora may be found undisturbed by outside agencies, as understood by the Ecological Society in its movement for the preservation of natural areas. The protection of natural conditions is a function of the National Parks and, to a certain extent, of the National Forests in preserving representative tracts of virgin forest which must serve the purpose of check plots for future silvical studies. As a matter of fact, most people who talk of wilderness areas are not so much interested in the scientific aspects of undisturbed plant or animal life as they are in finding some place where they can get away from the crowd. For this reason, it seems to me that accessibility, or rather inaccessibility, is of more importance than use of the resources. An area which was logged over periodically and then left undisturbed between cuttings would be of far more value as a wilderness area than a similar sized tract on which no cutting is allowed but which had a motor road running through it. While logging was going on the area would not be of so much value for recreation; yet, even then it would be better than the motorized park in that there would be fewer tourists. This would, of course, apply to forests logged by railroad rather than to those requiring permanent roads for development of the timber.

The principal difficulty with the wilderness policy is the small number of people who would use the area. The minute it is used by many it no longer is a wilderness. It may perhaps be possible to solve this aspect of the problem by considering the recreational function of a wilderness area as secondary and subordinate to the utilization of resources since, as has been shown above, the utilization of resources does not destroy the essential feature of the wilderness.

Grazing may interfere more with the wilderness area than timber cutting. However, so long as there is enough feed left for the game, the presence of scattered cattle or a few bands of sheep will not seriously detract from the value of the country for wilderness recreation, at least nothing like as much as a motor road in otherwise undisturbed country.

In carrying out the plan I would recommend selecting certain National Forests or portions thereof where game is abundant (as, for example, the headwaters of the Gila River in New Mexico), which can be adequately protected without motor roads, and keep such areas free from roads, hotels, summer cottages and the like.

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From C. Sheldon, Member of the Executive Committee of the National Conference on Outdoor Recreation

I have carefully read and considered Greeley's article on wilderness areas in SERVICE BULLETIN for October 18. For a long time I have given thought to this very subject with the result of conclusions clearly outlined in Greeley's article. It gives, in my opinion, the correct first step toward practically realizing a wilderness policy for the future, because it is sane. An effort based on a more extreme plan would only defeat, or delay indefinitely, the object. Any such policy must be carried step by step, each step bringing the public to a better sense of comparative values between the recreational and economic uses. I do not see how, at present, the Forest Service could consistently and wisely go any farther in the matter than the suggestions of Greeley. The time may come in the future when the public may demand more extreme measures. Should that time come, the problem can then be more intelligently dealt with. It would be unwise now to anticipate this future judgment. Naturally I wish to see wilderness areas dedicated exclusively to recreation. That is a personal view. But I recognize that any wilderness policy must depend on a much broader point of view - that of adjusted interests of the whole public, and that action must be based upon it. Greeley's view seems to me sane and well balanced toward achieving that end.

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From Arthur Ringland, Executive Secretary of National Conference on Outdoor Recreation, Navy Building, Washington, D.C.

I find myself in complete accord with the four principles defined by the Forester. The Forest Service administers the National Forests for the development of their economic assets and more particularly their material resources. Recreation is an asset and it is one that can be developed on the well-established principle of coordinated use. Wilderness recreation is but one form although it demands restricted treatment in administration. No one can foresee in the years ahead to what extent such restricted use of the Forests must be curbed to permit the legitimate development of the material resources. The policy, therefore, must be one of adjustment from time to time to meet changing conditions. Until such conditions must be met the so-called wilderness policy may well be applied to a number of regions within the National Forests and pre-development through the construction of roads or summer resorts avoided. The Middle Fork of the San Joaquin River, to which Colonel Greeley refers, is a specific case in point. If this region, for example, is set aside as a wilderness recreational area, I see no reason for its inclusion within the Yosemite National Park and I have so stated in an opinion filed with the Coordinating Commission on National Parks and National Forests.

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From John B. Burnham, President
American Game Protective and Propagation Association,
Woolworth Building, 233 Broadway, New York City

I have read with interest and profit the very able statement of Colonel Greeley on Wilderness Recreation Areas. Taken in conjunction with the action by the Service with regard to the Superior National Forest, I think the country is to be congratulated. While a very practical and able executive, Colonel Greeley has real vision and the strength which comes from a broad-minded view.

I personally am very strongly in favor of leaving considerable areas of National Forests in an unimproved condition, particularly where there is not an economic necessity for development. I believe in small areas and to a much more limited extent. The timber itself should be untouched so that we will have type examples of the original forests. I heartily approve of Colonel Greeley's action in setting aside that great area in the Superior National Forest for development other than lumbering.

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From Henry S. Graves,
Yale University, School of Forestry

I am, of course, greatly interested in the problem that has come up in regard to wilderness recreation areas. As you know, I have been asked to serve on the committee to try to get at some of the basic principles behind the national and state forest policy. This committee is composed of John Merriam, Herbert Hoover, Judge Payne, and myself. I have been giving a good deal of thought to that question, and naturally the problem of wilderness recreation areas is pertinent to it.

The fact is that certain interests are trying to develop a new kind of public reservation with a certain type of recreation in mind and adapted to a certain class of people.

The demand must, of course, be recognized and met in some way, but I do not like the idea of developing a new kind of recreation which is sort of a cross between a public park and forest. I doubt very much whether a real wilderness area can be maintained and at the same time lumbering and the development of other resources carried on; the two things are incompatible.

In the long run this problem must be worked out in connection with the whole system of public reservations. The National Park is, of course, the appropriate type of reservation for a natural area. At the same time I recognize that it would jeopardize the basic principle of National Parks to set aside wilderness areas that do not also have scenic features which would otherwise justify their establishment as National Parks. It is probable that at the present time it will be necessary to handle the situation on a more or less makeshift basis, and it seems to me that Colonel Greeley's suggestions are about as far as the Forest Service can go. The difficulty is, of course, that the advocates of great wilderness areas have a very laudable purpose in mind, but they are asking too much.

There is, of course, a scientific aspect of the problem of setting aside natural areas. I am personally more interested in this than in the great wilderness area idea. I think that it is of importance that we set aside for scientific study, areas representing different vegetative types. I think that this is already being done in the National Forests, but I do not have at hand the information of how far it has been extended. The problem is, of course, a very simple one because the areas would be relatively small.

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ANOTHER VOICE FROM THE WILDERNESS

L. F. Kneipp

During the past two or three years there has been increasing expression of a desire to have certain typical and relatively undeveloped areas in the United States permanently maintained as nearly as possible in a state of unmodified nature. The subject is most frequently referred to as the "wilderness" plan or policy and as such has been discussed at a number of important gatherings. It makes a strong sentimental or emotional appeal, awakening latent instincts and desires which are the common heritage of all humankind.

But in its generally accepted dimensions this conception of a form of land service, hitherto unique in the economics of the United States, is no trifling matter for it contemplates the practical closure not of hundreds or of thousands but of hundreds of thousands of acres of land to the forms of use and occupancy now generally regarded as requisite to the nation's social, cultural, and economic growth. Fix a limit of one hundred square miles and the idea either breaks down or is devitalized; one cannot be wild within an hour's walk, or even a half-day's walk, of the comforts of civilization. And the idea does not readily permit of compromises.

A subject like this lends itself to all sorts of abstract discussion. It can be analyzed as a problem in land economics; as a problem of constitutional government; as a question of the rights of minorities. But one approach to its consideration is an enumeration of the classes who will benefit or suffer by the adoption of such a policy on a large scale. Apparently these are:

The scientist, to whom virgin areas are essential in the determination and demonstration of the natural laws of plant and animal growth and succession.

The educator, who needs concrete means to demonstrate and interpret the findings of science.

The serious-minded student of nature, not a scientist but interested in science; not an educator, but interested in education; inspired by serious and constructive purpose to verify by personal observations in the field the findings of science and the declarations of the educator; exercising a definite cultural influence of first importance.

The victim of the strains and worries of modern existence who, for purposes of mental and physical recuperation, necessarily must isolate himself from the exhausting influences of his normal environment.

The seeker after the prestige of accomplishing the difficult, who, possessing peculiar qualities of hardihood, endurance and skill, demands opportunities to command the appreciation which such qualities deserve.

The seeker after exclusiveness to whom certain classes, races, or forms of recreation are distasteful or abhorrent and who, therefore, demands conditions which tend to exclude that which is distasteful to him.

The individual owner of land within the proposed wilderness area, whose use or enjoyment of his property depends upon the cooperation of associated landowners in forms of development which tend to make the properties more accessible or productive or valuable.

The resident citizen, whose material and cultural welfare depends upon the existence and growth of industrial, social, and economic institutions within his environment.

The industrial, commercial, and professional institutions of the region dependent for their continued existence upon a normal, constructive utilization of its natural resources.

The minor political unit, town and/or county, dependent upon the availability of productive taxable resources for its continued existence and for the development of better facilities in promotion of social, cultural and spiritual progress. Frequently endowed by Congress with certain legal or equitable rights to Federal aid in road construction, educational work, etc., rights which could not be fully exercised if a wilderness area embraced part or all of the unit or its supporting territory.

The major political unit, the State, which more remotely but nevertheless directly shares the needs and responsibilities of its constituent part.

The consuming public, sooner or later affected by any curtailment of land use or resources which will reduce supplies or increase prices.

The physically disqualified, the very young, the very old, the untrained who, being unable to meet the rigorous demands of wilderness travel, necessarily are excluded from the enjoyment of the recreational opportunities afforded by wilderness areas.

Here, then, are the elements of the problem, the factors which must be included in the equation if the final answer is to be a correct and a just one. In no two cases will the same factors be of the same magnitude or the same value. Some of them are concrete; others intangible, in fact imponderable. The return from the wilderness area frequently is a state of a mind, a psychological condition, for which no accurate standard of evaluation has as yet been devised. The wilderness recreation value of a given area may depend largely upon whether it is an eight-hour or an eight-day canoe journey from railhead or roadhead.

But the problem should be worked out project by project and be disposed of according to the answer derived. The gain of one group should be weighed against the loss of the other. There should be no abstract endorsement of the wilderness idea, nor abstract rejection of it. There are places where it can doubtless be justified over a long period of time as the highest form of social service which the particular area can render; there are places where its attempted application, while meeting a present demand, would result only in ultimate failure with consequent confusion and waste of effort and resources; and there are places where its application would be destructive of our best ideals and traditions. It cannot be considered as a generality; it can and should be considered as a special and peculiar form of land use or service, which in some few limited areas would yield the highest return in public welfare, but it should not be given practical application until that fact has been determined beyond question by a careful coordination and weighing of all the factors.

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A NEW WRINKLE

A New York company is widely advertising "living Christmas trees" (Norway spruce) 18 to 24 inches high, potted and specially crated, for $3.95 each. They lay great stress on the conservation feature of the living tree.

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THE FORESTER

The man who makes two blades of grass
To grow where one blade grew before
Has long been praised with sounding brass
In books and other learned lore,
But there's another man I know,
For whom the drum I'd like to thump,
The man who makes a sapling grow
Beside a stump.

We don't need hay, we do need trees,
So he's the man I'd like to praise.
I'm for the forester, for he's
The one who's serving future days.
He's doing much, he's doing more,
Who plants a seedling now and then
Than all these other planters for
His fellow men.

The man who makes a tree to sprout,
Where some one else has chopped one down,
Is doing more to help folks out
To serve his land and state and town.
We need some grass, no doubt of that,
But what about the pine and fir?
And so to him take off your hat -
The Forester!

Douglas Malloch
in American Lumberman.

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READ IT !

The Forester's annual report is to be released on the 17th. Copies have been sent to all Districts and Supervisors. Unfortunately the limited supply forbids sending a copy to each Ranger, but each Forest copy could be passed from hand to hand. Here is an interesting and readable account of the state of our common business. Not to read it might land one in a similar situation to that of the Forest officer's wife who once inquired of the Forester (not the present one) if he, too, was in the Service.

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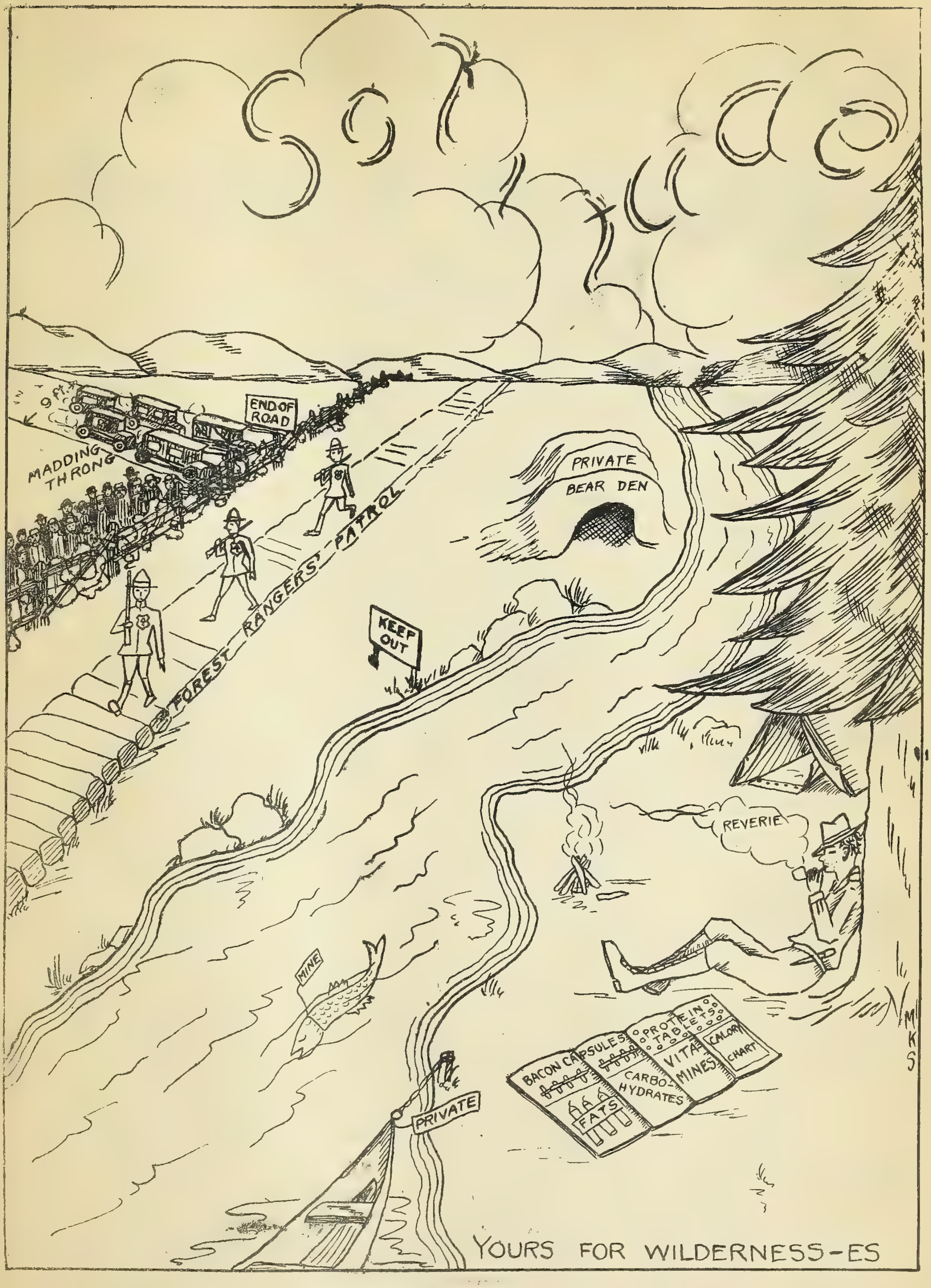
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CALORY CHART
VITA-MINES
CARBO-HYDRATES
FATS
MKS

YOURS FOR WILDERNESS-ES

Service Bulletin

U.S. FOREST SERVICE
(Contents Confidential)

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TAGS FOR CHRISTMAS TREES

By J. W. Spencer, D-2.

Christmas tree sales in District Two have been growing rapidly in recent years. In 1922, five Forests made Christmas tree sales to dealers. This year, probably at least sixteen Forests will be in the game, and it is estimated that ten times as many trees will be sold as in 1922. The increase is due partly to the diminishing supply of trees on readily accessible private lands, and partly to the efforts of the Forest Service to foster the business.

Near some of the larger cities in the District, the demand for trees has become so strong that thrifty young trees have been stripped from many parcels of patented lands and numerous acts of vandalism committed in parks and along roadsides. In order to combat these evils and also to offset the pressure from the not inconsiderable group of sentimentalists who don't want any young trees whatever cut, the Forest Service in some places started tagging all trees cut from its lands. These tags bear an inscription on each side. Wording varies slightly but that used in a representative instance is:

> "This tree was cut from the Pike National Forest under the direction of the United States Forest Service for the improvement of the stand."

On the other side appears this:

> "The prevention of forest fires through the past years has made possible this tree to decorate your home on Christmas day."

These tags are made of red cardboard and the inscriptions are surrounded by an attractive printed border of holly leaves and Xmas bells. A miniature cut of the Forest Service shield is also shown. Printing was done by the Property Assistant. The use of the tags started on the Pike Forest, and this year the Harney, Black Hills, and San Isabel Forests are also using them.

The City of Denver is cooperating with the Forest Service in tagging trees. Christmas tree dealers must take out the usual vendor's licenses. City officials inspect all dealers and require that all trees sold must bear either a Government or a City tag. The City issues white tags bearing an inscription stating that,-

> "This tree was cut under the direction of the City and County of Denver for the improvement of the forest stand."

There is some question as to the efficiency of the City's inspection of cutting areas but doubtless this can be worked out satisfactorily to give better results as time goes on.

The tag idea has, on the whole, met with general public approval. People are learning now to discriminate in favor of the tagged trees. The tags are enabling us to convey the message that cutting Christmas trees, if properly done, is a beneficial thinning measure to the forest and of course the use of tags does actually prevent the needless sacrifice of thousands of open grown seedlings.

The Government trees are cut from dense patches of reproduction and a carefully thinned and spaced stand is left. Trees are cut under direct supervision. Usually the lower parts of the stems which bear no green branches are trimmed off and only the top saved as a Christmas tree. Even with this treatment only a small proportion of the trees cut are symmetrical or thick enough for ornamental purposes. The culls are trimmed up and the boughs sold by the ton for wreaths, grave blankets, and similar decorations.

Replies to a questionnaire sent dealers in and about Denver last year indicate a general feeling that the trees cut from the Forest sale areas are much superior to the average run of farm cut trees. This is due, no doubt, to the careful supervision given cutting by Forest officers. This is proving true again this year and buyers are showing a marked preference for the "Government trees with the red tag."

Sales are made by advertising in the usual manner for competitive bids and the returns so far have more than paid for the cost of supervision and handling. Wholly aside from the financial profit the Service has been able to secure a very considerable amount of much needed thinnings and to put before the public in palatable form an effective object lesson in forestry practice.

KEEPING WOOD NAMES STRAIGHT

By Ward Shepard, Washington.

The long experience of the Forest Service in tree-names has recently been crystallized by the Committee on Common Names, assisted by the Forest Products Laboratory and others, into the following "Statement of Policy in Selecting Standard Names for Trees and Woods." This policy has been approved by the Forester and will appear in the forthcoming check-list.

In the interest of good trade practice and of protecting the consumer from obtaining inferior woods under the guise of misleading names, it is important that so far as practicable, different trees and woods bear distinctive common names, that the names be uniformly used, and that concerted efforts be made to prevent adding to the present confusion through getting into circulation further misleading or ill-chosen names. In selecting standard common names of trees and woods for its own use, as well as for the purpose of furnishing helpful guidance to the interested public, the United States Forest Service has used the following principles:

1. The names of different trees and woods should be clear-cut and distinctive. They should not be ambiguous, confusing, or misleading.

2. So far as possible a tree and the lumber cut from it should be called by the same name.

3. Attempts to standardize common names are met at the outset by preexisting common names for most trees and woods—names that are hard to change and that must be given much weight. Preference should be given to the most widely used common name, provided it is not misleading. Artificially coined names should be adopted only as a last resort. This principle applies not only to native but to foreign woods. Aboriginal or native names, like mahogany and teak, should when practicable be used for imported woods instead of artificial or borrowed names, whose purpose often is to mislead the consumer.

4. Common names of trees and woods should, so far as possible, follow the major botanical groupings of trees. These groupings are based on inherent, recognizable resemblances; they constitute a logical, coherent, and universally recognized order and system. To base common names on superficial, often fluctuating, resemblances

between botanically unrelated groups can only lead to confusion.

There are limits, however, beyond which common names can not follow botanical grouping. The botanical distinction of species may be based on characteristics too minute or inconspicuous to be easily recognized as the basis for distinct common names, as in the numerous species and varieties of Basswood. Or an improper common name may have become too firmly entrenched in usage to be upset, as, for instance, the name cedar applied to Juniperus, Chamaecyparis, Thuja, and other genera.

5. When botanical differences among species and varieties of a genus are too slight to serve as a basis for distinctive common names, a group common name should be applied. Examples are found in the Basswoods, Willows, Hickories, Oaks, etc.

Within certain genera, there are groups of species having common characteristics distinct enough to differentiate them as whole groups from other groups within the same genus. Examples are the red and white oak groups, the white and black ash groups, and the white and yellow pine groups. These group distinctions should be preserved in the names used for the individual members of each group, so far as possible.

It is natural and legitimate that group common names should be more extensively used for lumber than for the corresponding trees, because the trees with their bark, foliage, flowers, fruits, and other characteristics are often more readily distinguished than is the lumber cut from them.

6. Ordinarily a distinct generic common name should be used for each member of a botanical genus, as spruce (Picea), pine (Pinus), oak (Quercus), elm (Ulmus), etc., unless (A) firmly established usage of the same common name for two or more genera (such as the name cedar for Juniperus, Thuja, Chamaecyparis), or of two or more generic common names for different members of the same genus (as Butternut and Walnut for members of the genus Juglans), prevents the adoption of the principle but does not lead to deception; or unless (B) two or more genera are so closely related botanically and their woods are so nearly identical in structure, properties, appearance, value, and usefulness as to be to all intents and purposes the same. This latter exception rarely applies to native woods, but conceivably might apply to certain closely related woods of tropical genera, if they are not readily distinguished in practice, and if no deception results from the use of a group generic name. This principle is simply an extension of the principle of the group common name, as used in related species and varieties, to the larger groups known as genera. It is recognized that generic classification is not always fixed and unalterable, separate genera having sometimes been combined into one genus and single genera having sometimes been split up into two or more genera. When practicable however it would be preferable to follow the principle of a distinct name dor each genus.

7. The common name of one species, group of species, or genus should not be used for that of another species, group, or genus in such a way as to be misleading, nor should it be used otherwise than as provided in paragraphs 5 and 6 above. Even a close superficial resemblance between woods widely separated botanically is no warrant for violating the principle of adhering to botanical groupings. The use of modifying terms, such as the state, region, or country in which the wood grows, or of some word descriptive of the wood itself, does not alone atone for borrowing a name, nor does it safeguard the consumer against confusion or even deception. The tendency is for artificially borrowed names (as distinguished from those borrowed through popular ignorance) to be used to create a market for unknown and very often inferior woods. The use of borrowed names must be guarded against more and more carefully as the importation of new and unknown woods increases; otherwise there will be endless deception. An example of such misleading practice is the name "Swamp Walnut" which has been applied to furniture made of Willow. It seems fair for each wood to stand on its own merits and to make its way under its own colors.

IMPRESSIONS OF EUROPEAN FORESTS

In the Black Forest of Germany

By John D. Guthrie, D-6.

Of course everyone has heard of the famous Schwartswald of Germany. Quite appropriately we got into it at night, being driven in a big autobus at 11 p.m. from Baden-Os, some 12 miles to a forest tavern called "Kur-Sand". Here we made our headquarters for days.

It was most impressive being whizzed along fine roads at night through tall aisles of dark spruce. Of course it rained most of the time we were there--it usually does, they say. We were chaperoned by several forstmeisters and an oberforstmeister and saw a lot of forsters. Here was a picture forest and here were picture foresters, - green uniforms, canes, heavy hobs, green felt hats with deer tail brushes (reminding us unromantic Americans of a lot of inverted shaving brushes) stuck in behind, and of course an inevitable bench-legged dachshund or two.

We saw here pure spruce stands, even-aged, regularly spaced as an orchard, Scotch pine, mixed fir and spruce forests, beech and spruce forests, but mostly the pure spruce. The deer eat the beech and the fir seedlings and so these species are not popular here, though they admit, now at last, that pure, even-aged spruce stands are not desirable, neither as good revenue producers nor as improving the soil; in fact, a great detriment eventually to the forest soil. Get rid of the deer? Oh, no - never - game and game production is so interwoven with forest management in Germany (as well as in some other European countries) that you are a heretic to suggest getting rid of the deer. Besides we saw several deer stands in the Black Forest erected it is said for former royalties to use. One foolish American asked if they were fire lookout towers--which they did resemble--but he was solemnly told it was a deer stand or tower from which fine deer shooting could be had!

For the three days we were in the Black Forest and in spite of the early season (this was about May 12) we met a very large number of hikers -- young folks, old folks, middle-aged folks -- in twos, in threes, in larger groups; each with the inevitable rucksack on back, generally a cane, in woods clothes, sometimes hatless, out in the forest enjoying it. The German seems to have an innate love for forest hiking; we saw more of it in German forests than anywhere else in Europe.

We saw cutting going on in various types, logs peeled in the woods, skidded down hill to a road, pulp wood galore, charcoal pits; we saw wood workers' homes, little villages made up of wood workers, sawmills, and other plants, on the edge of the forest or in the small open valleys. There are large water-power plants being constructed now in the Black Forest, employing some 3,000 men. There is many a "Kur-Haus" (or "cure" hotel) in the Black Forest region, as well as several club houses. These are on privately-owned land, title having been acquired from the large company (a log-driving company of many years standing) which owns much of the Forest. The story of this Company (Schifferschaft, or river-drivers' guild or union) is an interesting one in itself, dating as it does back to feudal times. The Counts of Eberstein were the original owners of this forest. They had to borrow money to carry on their petty wars, and they got it from the river drivers, the men already then organized into guilds or associations, for taking Black Forest logs down the Rhine into Holland. These river drivers were wealthy, and so lent the Counts money but were wise enough to take mortgages on the Forest. Finally, the Counts being unable to pay, the Schifferschaft became owners after court action. There are to-day 22 different owners, all combined into a sort of association. Later, the Government bought up 51 per cent of the stock and shares in the association's activities, as the State does in Finland and Sweden.

The output of the Forest is distributed equally to stock owners; partly in cash and partly in logs, the product being distributed equally per share. The distribution in kind forms 59 per cent of the annual dividends. The region of the Black Forest runs in elevation for 2300 to 3300 feet. There is present a fire danger at certain seasons, though the period of heaviest rainfall comes in June and July, when the tourist season is at its height. Up to 1776, there was much burning of the Scotch pine areas by local peasants to improve the pasturage. This burning was prohibited by orders of the Counts in 1776, and these degrees proved effective in stopping the practice.

The present composition of the Forest is about as follows:

Spruce	44 per cent
Silver fir	42 " "
Scotch pine	9 " "
Beech	5 " "
	100 " "

The management by the Schifferschaft has been very conservative as 60 per cent of the stands are over 100 years old, and it is interesting here to note that the State (or Government) is now insisting that the old stock should be very materially reduced, which is opposed by the private owners. And here also, it may be of interest to note that the Black Forest, the largest and best forest in Germany, remained practically untouched throughout (and since) the World War, and even yet is hardly normally exploited, in spite of the severe financial straits which Germany claims that she is in as regards her war obligations. From Six Twenty Six.

HUMOROUS COLUMN

"Now that our country has grown to the point where wood is becoming increasingly valuable, our lumber companies are taking the greatest pains to see to it that they make out of our forests a perpetual investment." - From a newspaper interview.

A PROBLEM FOR THE CLASS IN FOREST ECONOMICS

By Elers Koch, D-1.

The Coeur d' Alene Mill Company sale in Marten Creek in the Cabinet Forest represents about the worst of the hemlock problem in this District. Perhaps some one further away can see more clearly what one ought to do with a stand like this than the men who are close up to it. Suggestions and comments through the Service Bulletin or direct to the District are invited.

Here's the problem:

Two thousand six hundred and sixty acres of white pine and hemlock 300 to 350 years old. White pine, only old veterans left, ranging up to 4 feet in diameter. Very defective. No thrifty trees. Hemlock. Very defective. Over 100 million gross scale on the area out of which it is expected to cut about 1/5 that amount on a 50 per cent tree merchantability clause. A check run of logs shows 44.9% of the logs taken out to be defective. The cull per cent in logs scaled is 25.4.

About 1/7 of the timber has been cut. The estimated timber remaining and the present stumpage rates are as follows:

	Stumpage		Cooperative	Deposits
26,000 M.white pine	$4.15	$107,900	$1.25	$32,500
500 M dead white pine	1.25	625	1.25	625
17,000 M hemlock	.60	10,200	1.25	21,250
5,500 M white fir	.75	4,125	1.25	6,875
6,000 M spruce	1.25	7,500	1.25	7,500
600 M larch & fir	.50	300	1.25	725
Total		$130,650		$69,475

The present contract contemplates cutting both white pine and hemlock as closely as possible (there are practically no white pine trees fit to leave for seed trees), piling and burning the slash and disposing of the remaining defective hemlock either by a combination of girdling with felling and piling brush, or felling all the defective hemlock and broadcast burning. In either case we may get natural reproduction from seed in the duff, or we may have to plant.

It is probable that funds will not be sufficient to fully clean up the area.

The operator is begging for relief. The hemlock is so defective that it cannot be worked into ties or timbers, and in spite of a very intensive selling campaign he is losing heavily on it.

A recent appraisal was worked up, based on both 5-year averages and 2½ year averages. On the 5-year basis the appraisal shows the following indicated stumpage values; white pine $11.65; spruce, minus $4.09; hemlock and white fir, minus $9.19. On a 2½-year average, which probably represents most truly the conditions to be expected for the next three or four years, the indicated stumpage values are, white pine, $6.31; spruce, minus $2.87; hemlock and white fir, minus $7.67. It is obvious that the loss on the hemlock will pretty well wipe out the purchaser's profit margin. It is also apparent that the Government is paying pretty big money to get the sound hemlock salvaged. To remedy the situation two plans have been proposed. It is probable that the purchaser would gladly agree to either one of them.

The first plan is to limit required cutting to white pine and spruce. Increase the stumpage rate on white pine from $4.15 to $7.15 per M, and the co-operative deposits from $1.25 to $2.75 per M. Slash all the hemlock and white fir, and broadcast burn. The returns under this plan would be as follows:

	Stumpage		Cooperative Deposits	
26,000 M. white pine	$7.15	$185,900	$2.75	$71,500
500 M dead white pine	1.25	625	1.25	625
6,000 M spruce	1.25	7,500	1.25	7,500
Total-		$194,025		$79,625

Comparing this with the returns from the present contract we see that the Government gets $64,000 more stumpage from the area, besides $10,000 more cooperative deposit. The cooperative funds will be sufficient to slash and broadcast burn the entire area, leaving it in shape to plant, or possibly for natural reproduction. The operator is relieved of $170,000 loss on the hemlock and white fir, of which only $117,000 is taken up in the increased rate on pine.

The only disadvantage is that the American people lose 22,500 M. of hemlock and white fir logs, which are burned up instead of going into the nation's timber supply.

The other plan is to cut only white pine and leave all the hemlock and spruce untouched. The slash from the white pine would be piled and burned. The area would be left green, safe from fire and - unproductive. On this basis, if we leave the cooperative deposit at $1.25 per M., which is a very safe figure to handle the white pine slash, and relieve the operator from cutting anything other than pine, we could probably justify raising the white pine stumpage from $4.15 to $8.50, making the total returns $221,000.

We would have left a stand of rotten hemlock, getting worse every year, but pretty safe from fire. Whether hemlock will ever be worth enough to go into a hard logging chance and salvage 20,000 M. of scalable material out of 100,000 M. gross, is a question. Also if that could be done 40 or 50 years from now there would still remain the problem of disposing of the remaining 80,000 M. of rotten logs. In the meantime the area remains totally unproductive. It doesn't sound so bad for one tract of 2,500 acres, but if the plan is accepted it applies to a good many townships in District 1, including much of the most productive land.

HOW THE SAN BERNARDINO PUT OVER "NO SMOKING"

By S. A. Nash-Boulden

Regarding the pro and con of the "No Smoking" ordinances, the following will give you an idea of its "workings" on the San Bernardino during the past year.

In an effort to bring about a marked reduction in the number of man-caused fires, and to offset the reduced fine made possible by the 1925 amendment to the state fire law, the County Board of Supervisors was last year induced to pass a "No Smoking" ordinance which made it a misdemeanor to smoke on National Forest land from May 1 to November 30 of any year, except at improved public camp grounds or a place of habitation. This ordinance also applied to county land outside the Forest except that it was modified to permit smoking but prohibiting the throwing away of lighted cigars, cigarettes, etc., without first extinguishing the same. This year, the ordinance was elaborated upon and repassed, and the Riverside County Board of Supervisors put through a like ordinance in their county.

The season of 1925 was given over to an educational program with an idea of getting the new ordinance across to the public, and the only arrests made were in cases where the information was not taken kindly and somebody became "hard boiled." The courts gave us good backing and the press much favorable publicity, with the result that before the season closed the new ruling was well understood and had public sentiment behind it.

This year, during the holiday periods and the early part of the hunting season, patrolmen were withdrawn, as necessary, to control stations established on the main traveled roads leading to the Forest. Emergency patrolmen, some cooperative, were placed to aid our force in stopping each machine, warning the passengers regarding the no smoking rule and passing out dodgers issued by various public service bodies. As more patrolmen were available, they were placed along these same roads and checked the traffic to see that the no smoking rule was not being violated. Where violations were found, prosecution followed, and it did not take long to get the news around that it would prove an expensive smoke if caught, since Justice courts were passing out fines of from $10 to $50.

Leaflets, pamphlets, dodgers, and lectures given by various public and semi-public organizations have also been a great aid in our educational program, and the public is sold to no smoking and no man-caused fires.

In order to get the no smoking information across to the passengers in every machine entering the Forest during the holiday periods we had to maintain a 24-hour patrol at the control stations and there were two men on duty at all times. The Waterman Canyon station passed in approximately 5,000 machines and issued as many dodgers over the 4th of July weekend. At times there were as many as 30 machines waiting at the control to be passed. Fireworks were also removed at these stations and later returned to owners if they called for them, but no guarantee was given that we would check them separately.

The San Bernardino Forest has enjoyed a normal fire season this year and while we have had a subnormal condition as to travel in the forest, we feel that the rank vegetation due to the late spring rains has more than offset the lower risk by increasing the hazard abnormally. The local Chamber of Commerce estimates that the forest has received 800,000 visitors to date, a slightly lower figure than last year.

While we can not reasonably expect immediate results from work of this kind, the following facts and figures prove interesting.

Against 15 smoker fires in 1925 we have had this year, to date, five smoker fires inside and five outside.

Arrests for violation of "No Smoking" ordinance	- 115
Convictions	- 108
Pending	- 7
Fines assessed	$2,144
Suspensions	$ 150

Suspensions are due to the inclination of some justices to disfavor the minimum fine of $50. More often the fine is assessed at $50 and $35 or $40 suspended. However, we have a few who hand out the 50 straight with no garnish whatever.

Needless to say, it has taken much time and effort to put this across, and the local organization can well feel proud of the result of their efforts. To ride the public and not only have them back of you while so doing, but have them stronger for you in the end, - well, did somebody say "Fire conscience?"

COMMUNITY SUICIDE

This is the apt heading given to a recent editorial appearing in the Albuquerque Journal. It deals with the destruction of Pueblo Bonito through the destructive forces of erosion. In part the editorial states: "A thousand years ago the citizens of Pueblo Bonito, Northwest New Mexico, committed suicide by deforestation. That is the verdict of Neil M. Judd, archeologist of the Smithsonian Institute, at the end of the sixth season of work on the ancient pueblo by the National Geographic Society. The report generally has been hailed as a solemn warning to Americans of this generation. Deforestation still is going on, though we are better able to cope with it than the primitives of a thousand years ago, who wasted their forests and then had their fertile soil swept by flood waters. Discussing the disappearance of the ancient pueblo, Dr. Judd has come to the conclusion that the 'Bonitians wasted their pine forests, baring the soil to wind and water. The summer rains, without which desert plants do not mature, thus drained immediately into the newly formed arroyo, increasing it in both depth and width. In a relatively few years fields cultivated throughout many generations were no longer able to produce food for 1,200 people. The inhabitants began dribbling away a few at a time, so that in a comparatively short while Pueblo Bonito fell from its position of economic and cultural leadership to a mere handful of conservative families, loath to leave the empty shell of their ancestral home.' Outside of the archeological findings, no announcement has been of more general interest than the one just made as to the theory of deforestation suicide of the pueblo." -- District 3.

INCREASED FUNDS FOR FOREST ACTIVITIES

In his budget message, delivered in Congress on December 8, President Coolidge emphasized his interest in forestry and forest problems. Under the caption "Forest Conservation," he said:

"The forest acreage in the United States is approximately 470,200,000 acres, of which 158,759,000 acres are in the National Forests. With such generous forest resources, we have been prone to consider the supply of forest materials inexhaustible. The constantly increasing demands to meet our growing needs, however, and the destruction of forests by fire are arousing apprehension that in the comparatively near future industry may be handicapped for lack of forest products."

The Agricultural Appropriation Bill was reported out by the House Committee on Monday, December 13. The increases recommended by the Committee are as follows: General Expense, for fire prevention and presuppression $77,285, for timber sale work, $40,000, for grazing administration $6,000, for the Military Forests $3,742, making a total of $127,027 for this item. Silvical investigations $60,000 for establishing Experiment Stations in Pennsylvania and the Ohio and Mississippi Valleys. Planting $18,300. Forest fire cooperation $290,000. Forest roads and trails $1,500,000. The $40,000 increase for the Forest Products item which was included in the budget was eliminted by the Committee.

The Committee has reduced the authorization for the purchase of passenger-carrying vehicles from $45,000 to $30,000. They have also reduced the authorization for the purchase of cars to replace those turned over to the Department by the War Department from $35,000 to $25,000. They have also included a proviso which limits the expenditures for maintenance of passenger-carrying vehicles to one third of the cost of a new vehicle of the same class, with a maximum limitation of $500. This will prevent the operation of old worn out cars for a part of the year at least.

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